

LEIMAN BROS.

Makers of Good Machinery for 40 Years

MACHINERY, TOOLS and WORK BENCHES

Catalog
No. 28

For Artisan Metal Workers,
Jewelers, Silversmiths,
Dentists, Novelty Makers,
Colleges, Schools and
Laboratories

Catalog
No. 28

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IDEAL MACHINERY CO.

MACHINE
TOOLS



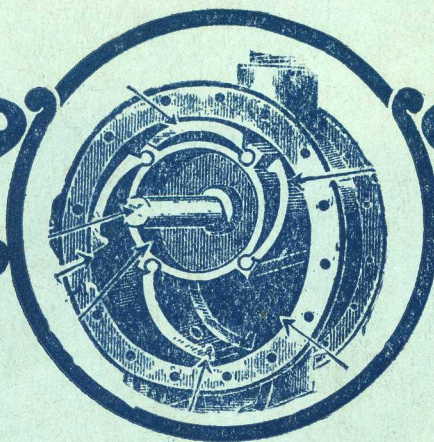
MOTORS
&
SUPPLIES

PLAINVILLE,

CONNECTICUT

AIR PUMPS
GAS PUMPS

OIL PUMPS
SAND BLASTS



LEIMAN BROS.

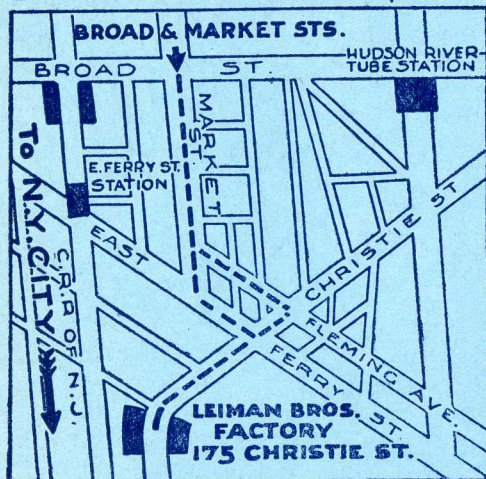
MANUFACTURERS

23 WALKER ST., NEW YORK

Makers of Good Machinery for 40 Years

~ How to Reach Us ~

**8 MINUTES FROM
BROAD & MARKET STS.**



NEWARK

NEAR BROADWAY & CANAL ST.



NEW YORK

LEIMAN BROS.

Makers of Good Machinery for 40 Years

**23 WALKER STREET
NEW YORK**

Works: Newark, N. J.

Complete
Motor Driven
Equipment for
Jewelers
Silversmiths
Dentists
Artisan Metal Workers
Colleges
Schools
Laboratories

Fuel Oil Burner
Pumping Units
Burners
Strainers
Pilot Controls
Safety Oil Controls
Complete
Air, Gas or Vacuum
Pumping Outfits



TERMS

NET CASH 30 DAYS — NEW YORK EXCHANGE

To all having an open account with us, a satisfactory commercial rating or furnishing us with at least three satisfactory references. To all others 25% cash with order; balance C. O. D. Minimum deposit must equal carrying charges, packing and handling expense.

ALL FOREIGN ORDERS

Cash with order New York Exchange with an extra charge for boxing of 10% and with transportation and insurance charges added.

Where specific shipping instructions are not given with order we use our own best judgment.

All agreements are contingent upon strikes, accidents or delays of any kind, unavoidable or beyond our control. All goods sold F. O. B. Newark, N. J., or point of shipment. Electric motors furnished are for either direct or alternating current 60 cycles, single phase, 110 or 220 volts unless otherwise noted. Be sure to specify the current you intend to use. Contracts and orders subject to acceptance at Newark works.

When we take a clear receipt from the Transportation Co., indicating that we have delivered the goods to them in first class condition our responsibility has been fulfilled. If you give the Transportation Co., a

clear receipt for damaged goods, you do so at your own risk. If goods are broken, a description of the damage should be endorsed on your freight bill and acknowledged by Transportation Co. You can then collect full value of damage from them.

All information, dimensions, prices, etc., are subject to change and we reserve the right to fill orders with altered or improved machines or machines of equal capabilities even though there may be differences in sizes, weight, prices, descriptions, or other features.

GUARANTEE

All goods sold or made by us are subject to our own guarantee or that of the actual maker.

Our own guarantee covers the replacement of defective parts which are returned to our Newark Works carriage prepaid for our examination.

Our decision in the matter to be final. When replacements are made they are shipped F. O. B. Newark, N. J. and no allowance is made for work done on defective parts or expense of dismantling or attaching replacements.

Guarantee effective for one year from date of shipment.

No goods should be returned to us without previous notice to us and the receipt of shipping directions.

**ALL FIGURES AND PRICES SUBJECT TO CHANGE OR CORRECTION
WITHOUT NOTICE.**

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SAVE HEALTH
SAVE GOLD
SAVE TIME
SAVE MONEY

THE WORLD'S
MOST EFFICIENT
MEANS OF
COLLECTING
POLISHING AND
GRINDING DUST

Leiman Bros. Patented POLISHING DUST COLLECTOR

MAKES WORK
MORE INVITING

OCCUPIES
LITTLE SPACE

NOISELESS AND
ATTRACTIVE

PAYS FOR ITSELF
IN SHORT ORDER

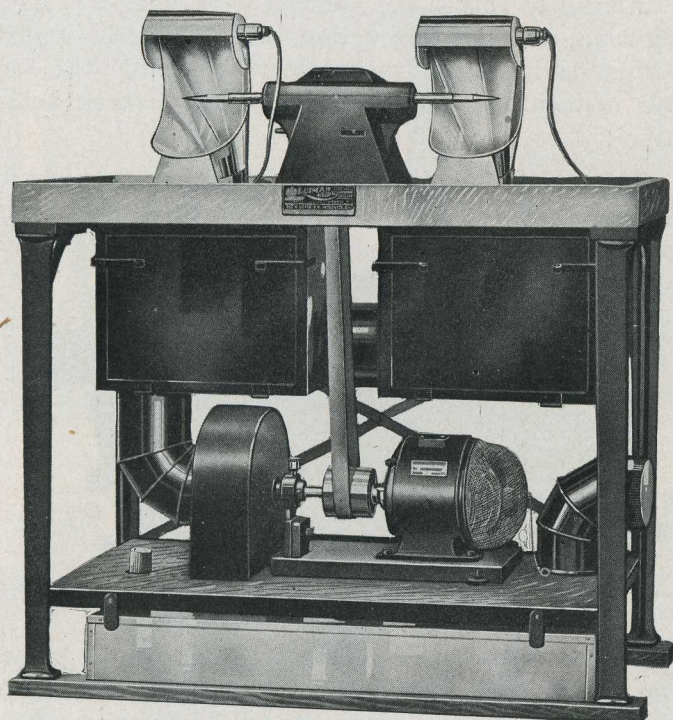
L EIMAN BROS. polishing dust collecting outfits are strongly constructed machines capable of a lifetime of service. They combine the wet and dry system of dust collection.

The dry system consists of the system of cloth bags suspended in the metal cabinets under the bench.

The cloth is of a specially fine weave made for the purpose and here practically all of the dust is

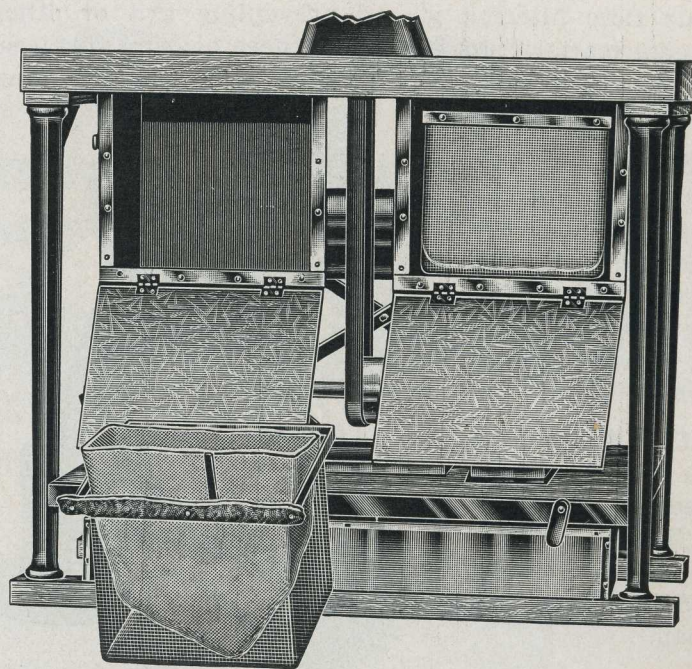
hoods on top of the machine and this current of air draws in all dust flying from the buff or grinding wheel.

No polishing dust collector can do more and in fact here we offer a machine that collects over 95% of all the dust created complying with all requirements of factory departments, boards of health and other authorities.



Polishing Outfit showing Dust Bag Cabinets and Bottom Water Bath Pan caught and held. Should any very fine dust escape it is surely trapped in the water bath at the bottom of the machine. The air current keeps this water fresh and sweet.

The suction fan coupled directly to the motor shaft creates a very powerful suction of air at the dust

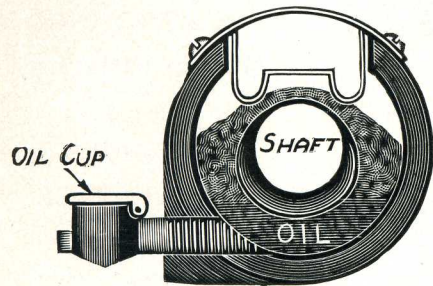


The Cloth Bags which Catch and Hold the Dust—
They are Washable and Renewable

Noiseless in the extreme these machines are especially adapted for office buildings, stores, offices, homes or wherever a noisy machine could not be tolerated.

Here you have an outfit (it makes no difference which you select as far as this point is concerned) that is without a peer for the work it is intended to do.

The machine with proper care, will last a lifetime but we do not figure on more than a ten year period when we say that even the most expensive machine will cost no more than about 10 cents a day and the cheapest about 1 cent a day—exclusive of the in-



The Wool Yarn Packed Bearing for all Bearing Surfaces. Contains enough oil for many months of steady operation.

come to be derived from the recovery of valuable metallic particles from the dust—which value is now wholly lost.

We have added improvements whenever our experience suggested it. We now have the bearings on the lathe heads, motors and fan shaft fitted with our latest improved wool yarn type bearing. These bearings have renewable bronze sleeves and an oilwell in which enough oil may be placed to last for many months of steady operation.

The wool yarn holds the oil in suspension and being wrapped around the revolving shaft it feeds the oil to the latter and to the bearing surfaces at the same time filtering it and preventing grit or other foreign matter from getting to these bearing surfaces. The result is cool, easy running, noiseless and long wearing bearings.

Each polishing lathe head may be stopped while the machine is running by simply throwing over the belt shifting lever at the front.

The bench tops are covered with sheet zinc and may be wiped off with a cloth occasionally and kept neat and clean.

Each machine is nicely finished, the wood parts in a natural grain finish and metal parts in red, gray and black, the model 47 alone being finished in gray-lacquer. Altogether the machines are neat and pleasing in appearance, sturdy and strong in construction and money makers as well as money savers in any shop, laboratory or store.



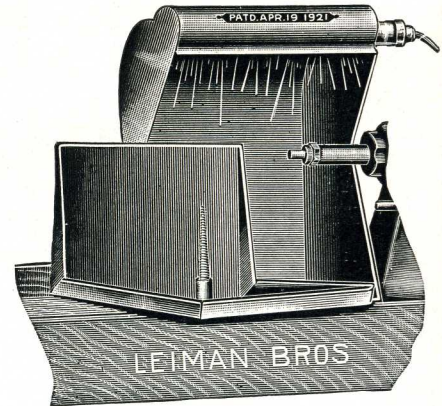
The Fishmouth Hood with Electric Light Attachment for Jewelry Work—used on models A & B.

The hoods of each machine are especially made for the purpose for which the machines are meant—fish mouth hoods for jewelry work, flat hoods for silver and large pieces, flat hoods with removable water pans for dental work—the latter pans may be removed for dry grinding and polishing and used when wet pumice grinding is to be done.

All suction hoods are equipped with electric light socket and attachment.

The polishing lathe heads are equipped with removable and renewable threaded taper points on each end for brushes and buffs.

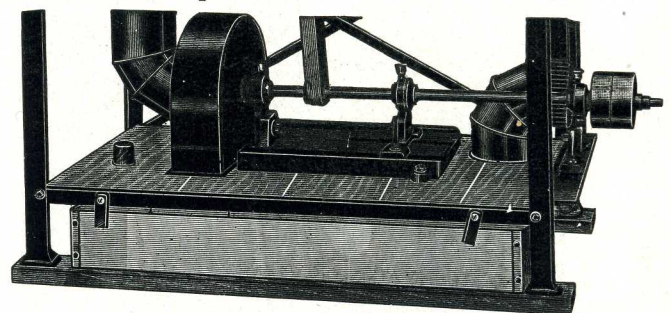
The fan shaft attached to the motor shaft is supplied with an independent hanger bearing support relieving the motor of the weight and strain and this, too, means longer life for the machine.



The Special Design Dental Hood—showing the Removable Water Pan for Wet Pumice Grinding, used on Models A, B, 47 and 38 for Dental Work.

Added to this is the comfort of a neat and clean work room and sure protection to your health—polishing dust is irritating in the extreme and will soon cause discomfort, illness and in many cases actual death.

One cent to ten cents a day is little enough to pay for this protection and here it is in the very best and most convenient form possible.

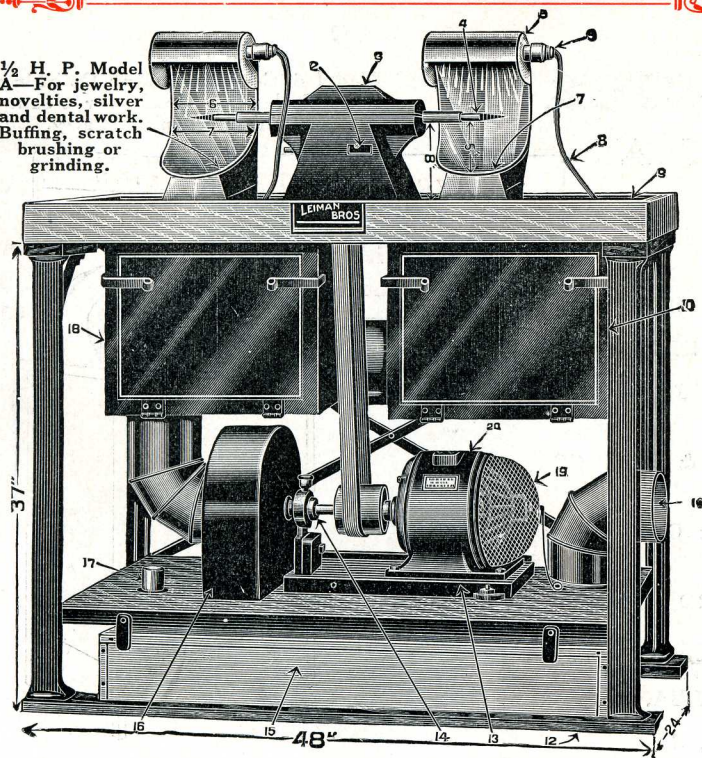


This extended Fan Shaft is used when it is desired to have a machine to run from a shop power shaft.

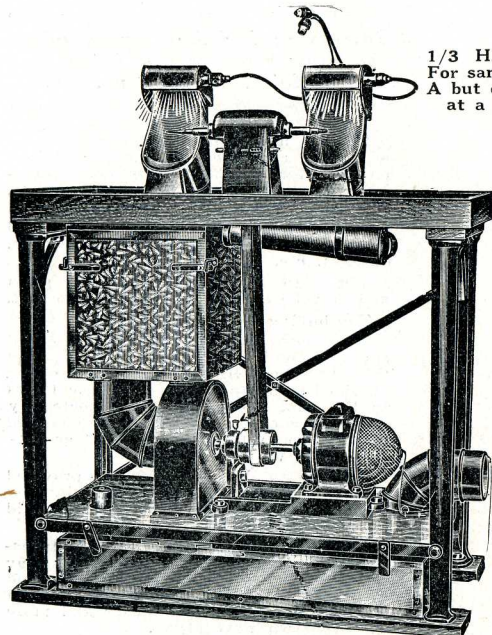
Model 38 is meant especially for dental laboratories or for very light work. Models 16 and 31 for silver cleaning and buffing. Model 22 for pen nibs or points and similar articles and Model 26 for fountain pen barrels, and work of that nature, model A, B and 47 for Jewelry, Novelties and Dental Work.

Be sure to specify kind of electric current to be used, 110-220 Volts D.C. or A.C. one, two or three phase.

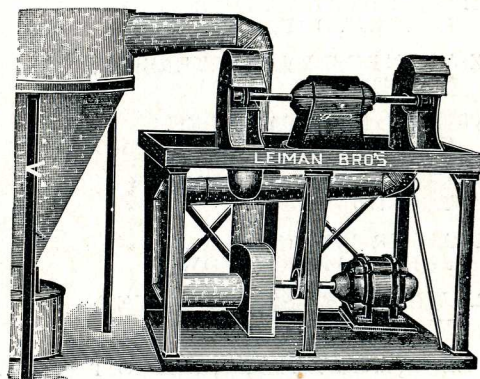
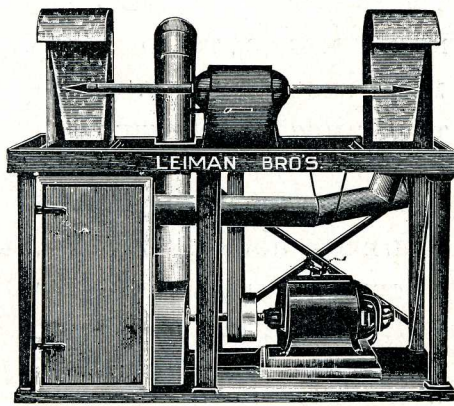
1/2 H. P. Model A—For jewelry, novelties, silver and dental work. Buffing, scratch brushing or grinding.



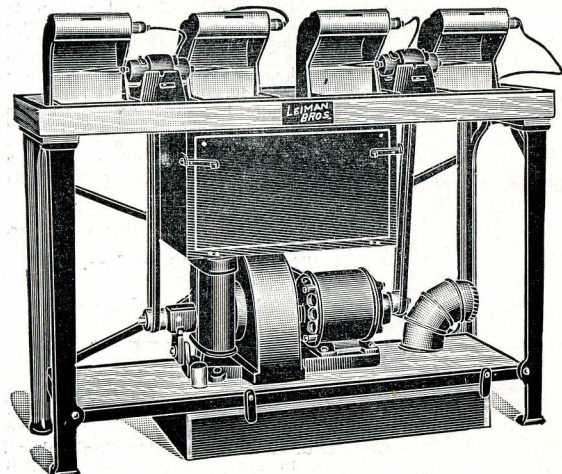
1/3 H. P. Model B—For same work as Model A but only one operator at a time on either side.



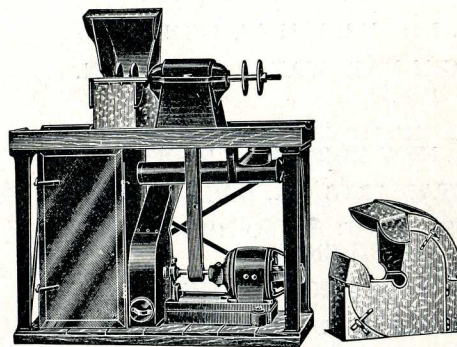
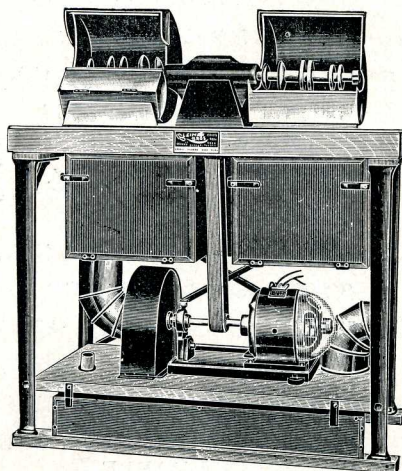
2 H. P. Model 16—For cleaning, buffing or scratch-brushing silver and similar pieces. Electric Light Attachment on Hoods.



2 H. P. Model 31—Same as Model 16, where the dust is not to be saved. Electric Light Attachment on Hoods.



1/2 H. P. Model 38—For dental and other light grinding, buffing or scratch brushing.



1 H. P. Model 26—For Fountain Pen Barrels. Electric Light Attachment on Hoods.

1 H. P. Model 22—For Gold Pen Nibs. Electric Light Attachment on Hoods.

PRICES OF LEIMAN BROS. POLISHING DUST COLLECTORS

Models	A	B	38	16	31	22	26
Class of Work	Jewelry, Novelties and Dental Work.		Refinishing Silver and Novelties		Gold Pens	Rubber Pen Barrels	
Power of Motor H. P.	1/2	1/3	1/2	2	2	1	1
Sizes and Number of buffs to use—ins.	2 - 8 ins.	2 - 4 ins. alternating	4 - 2 ins.	2 - 12 ins.	2 - 12 ins.	6 special	2 Special
Spindle length each end including taper points—ins.	5 1/2	4 1/4	5	11	11		
Spindle diameter inches.	7/8	3/4	1 1/8	1 1/8	1 1/8	1 1/8	1 1/8
Spindle height inches.	7 3/4	7	4	12	12	9 1/4	9 1/4
Floor space—ins.	24x48	20x44	19x57	30x60	31x53	23x47	24x48
Approximate weight—lbs.	375	300	400	740	800	410	480

PRICES \$225 \$180 \$335 \$352 \$352 \$305 \$350

Motors are for 110 or 220 Volts D. C. or A. C. 60 cycles 1 - 2 or 3 phase—specify which—also specify which hoods are wanted for Models A and B. See page 2.

When furnished without motors for driving from a shop shaft we furnish special shaft arrangement shown on page 2—price being the same as with motors.

LEIMAN BROS. **POLISHING DUST COLLECTOR**

USERS AND COMMENTS PICKED OUT AT RANDOM FROM HERE, THERE AND EVERYWHERE

—"Is proving very beneficial to us, both from a financial standpoint and turning out much improved work—"

—"Find it about the most essential piece of equipment—able to do cleaner and faster work—"

—"Certainly is the best investment any laboratory can make—"

SAMUELS & CO., SAN FRANCISCO
CASTLEBERG JEWELRY CO.,
WASHINGTON

H. F. SHELOW, DAYTON
UNIVERSITY OF MINNESOTA

HOWARD UNIVERSITY,
WASHINGTON, D. C.

CENTRAL DENTAL LABORA-
TORY, CHICAGO

EMPIRE STATE DENTAL
LABORATORY, SYRACUSE

WESTERN RESERVE UNIVERSITY,
CLEVELAND

BARRETT FOUNTAIN PENS,
CHICAGO

CONKLIN FOUNTAIN PENS,
TOLEDO

SHEAFFER PEN CO.,
FORT MADISON, IOWA

DR. WHEELER, SOUTH HAVEN,
MICH.

DRESCH LABORATORY, DETROIT

W. J. THEOBOLD, GREENSBURG,
PA.

GEO. SELIG, FRANKLIN, PA.

DR. MILLER, BUTTE, MONT.

ELGIN NAT. WATCH CO., ELGIN,
ILL.

DR. BLOOM'S LABORATORIES,
NEW YORK AND BROOKLYN

METAL ARTS CO., ROCHESTER

AUTOMATIC GOLD CHAIN CO.,
PROVIDENCE

LITWIN & SONS, CINCINNATI

BLANCARD & CO., NEWARK

EDWIN HARROP, LONDON

OWENS BROS., LONDON

KING & EISELE, BUFFALO

KATZ & OGUSH, NEW YORK

SOUTH BEND WATCH CO.

HEACOCK CO., MANILA

WILLIAMS GOLD REFINING CO.,
BUFFALO

NATIONAL CLOAK & SUIT CO.,
KANSAS CITY

SEARS, ROEBUCK & CO.,
KANSAS CITY

MONTGOMERY WARD CO.,
KANSAS CITY

UNITED STATES VETERANS
HOSPITAL, AZALEA, N. C.

DR. McCALL, ROME, GA.

GOULSON & FLETCHER,
JACKSONVILLE, FLA.

COMPTON DENTAL LABORA-
TORY, SAN ANGELO, TEXAS

NATIONAL SOLDIERS HOME, VA.

THOMAE & SON, ATTLEBORO

NAMIKI MFG CO., TOKIO

MARK CROSS CO., N. Y.

TOWLE MFG. CO., NEWBURY-
PORT, MASS.

ELGIN WATCHMAKER'S COLLEGE

HILL BROS., HOUSTON, TEXAS

AMERICAN EMBLEM CO., UTICA

NOTERMAN & CO., CINCINNATI

STAR RING MFG., CO., BUFFALO

BETTERIDGE, INC., N. Y.

GRANAT BROS., SAN FRANCISCO

TIFFANY, N. Y.

SHUR-ON OPTICAL CO.

OXWELD ACETYLENE CO.

WILCOX LABORATORIES,
BUFFALO

DIEGES & CLUST, N. Y.

BOSWELL CO., TULSA

SIMON MILLER & CO., NEWARK

SODEN & CO., CHICAGO

TIMMS JEWELRY CO., ATLANTA

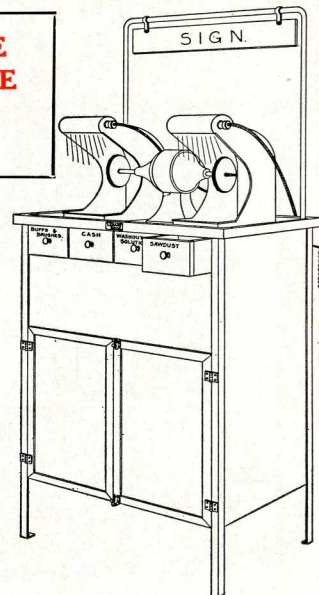
KEYSTONE WATCH CASE CO.

INTERNATIONAL TICKET CO.

LANDAU'S JEWELRY STORE,
WILKES BARRE

Model 48C—Advertising Polishing
Dust Collecting Outfit for cleans-
ing and polishing Jewelry.

**ADVERTISE
YOUR STORE
With This
Machine**



**Something for the store window,
the show room or for exhibitions
at fairs, conventions, etc.**

This is a complete polishing machine with dust collector attachment and may be used for window exhibitions attracting wide attention to the work you do.

At exhibitions, fairs and conventions a great deal of profit may be secured by cleaning and polishing the jewelry, watches, etc. of visitors.

The sign panel at the top is glass and may be lettered by the user to suit.

The buffing motor is of $\frac{1}{4}$ H. P.

The motor that creates the powerful air suction is inside the machine and this, together with the polishing motor on the bench top, and the electric lights on the dust hoods are all connected by one lamp cord so that it may be operated from any convenient lamp socket or outlet in the wall.

The dust collecting hoods are provided with a powerful air suction for drawing away the dust which is caught and held in the bag inside the machine.

The hoods are provided with transparent backs so that customers may watch the progress of your work and thus inducing others to patronize you on the spot or to leave other and more extensive work with you.

In doing work of this kind for the general public pieces of gold and platinum all contribute small metallic particles in the dust and these are caught and held with the dust inside the machine to be refined and the value recovered by you afterwards.

The machine has four small drawers in which may be located buffs, and brushes, cash taken in, cleaning solutions, drying sawdust and perhaps a little electric heater for the solutions and sawdust.

Substantially constructed a money maker, advertiser and business builder.

Size 18 x 29 inches.

Finished in Gray Lacquer.

PRICE \$175.00

Complete as shown, ready to run. Electric polishing motor and interior motor for suction to operate on 110 volts D.C. or A.C. 60 cycles single phase. Be sure to specify which current you have.

LEIMAN BROS., MODEL 47 GRAY DUCO FINISH

A SILENT
POWERFUL SUCTION

Polishing Dust Collector

PRICE
\$125.00
fob our factory
Always in stock
Electric polishing motor
extra, if required.
(See page 19)

For Jewelers, Dentists, Light Metal-workers and Artisans in all
Materials Requiring Polishing—



A DUST COLLECTOR

To use with any make, size
or style
Electric Polishing Motor

with dust Catching Hoods
having a very strong suction
of air to draw away every
particle of dust.

Every worker on metals and other materials where a bright finish is required knows the drawbacks of polishing—they know the difficulties experienced in turning out good work with dirt and dust flying into the face and covering everything about the shop.

This is all unnecessary. A clean shop is not only possible but is an actual fact in thousands of places all over the country.

Leiman Bros. have been making dust collectors for 40 years and have embodied all this experience in this single, simple compact little machine occupying only 18 x 29 inches floor space.

Almost every dentist, jeweler, or other artisan has some sort of a little polishing motor—but what about a dust collector? Well, here it is! just the thing! A table with suction hoods. The polishing motor you now have you simply stand on this table in between the two dust hoods which latter may be moved sideways or back and forth so as to give you just the right adjustment to your buff.

LEIMAN BROS. Powerful Suction DUST COLLECTOR

18 x 29 inches floor space. Gray Duco finish. Use your own electric polishing motor on this table. The suction hoods are adjustable to fit your motor.

The suction hoods have electric light socket and attachments which together with the wire from the motor underneath can be spliced and all run from one electric light socket in your shop.

The price is for direct or alternating current, 60 cycles, single phase, 110 volts.

(We can furnish electric polishing motors, too, if you want one.) See page 19. Smooth running, powerful and efficient for Jewelers, Dentists and Artisans in all materials.

To breathe polishing dust is of course, dangerous to the health of the operator—everybody recognizes that. It is also dangerous to the pocketbook to polish precious metals without the use of a dust collector. Here you recover the values you are now losing and protect your health, too.

DECIDE — ACT — USE — PROFIT

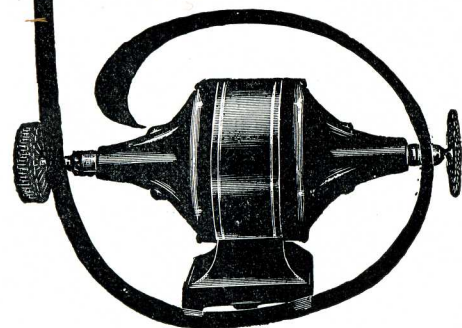
GET THIS DUST COLLECTOR TODAY!

The machine is made of heavy copper with a gray Duco finish throughout presenting a clean sanitary appearance at once coolingly sweet to the eye—and it can be kept so.

YOU WANTED A DUST
COLLECTOR

These Many Years—Well
here it is and in just the
form you wanted it—

PRICE
\$125.00
fob our factory
Electric Polishing
Motor extra, if
required
(See page 19)



A Table with a powerful Suction made to fit your
present Electric Polishing Motor.

FLOOR SPACE
Only 18 x 29 inches

Leiman Bros.
MODEL 47
POLISHING
DUST
COLLECTOR

PRICE
\$125.00

fob our factory
Electric polishing
motor extra, if
required.
(See page 19)

for use with your present Electric Polishing Motor

A Dust Collector That Breathes in
the Polishing Dust.

It has lungs that catch and hold the dust. Substitute it for your own lungs that are now breathing in the dust and holding it. Thus you profit in health and you can take the dust and recover its value of precious metallic particles.

You can't do that with your own lungs. So get this—

The machine runs very smoothly and practically silent so that no objection to its operation can be found by anyone—it is built to satisfy and it does. It makes dust collecting a fine art—you'd say so if you saw it running off your own electric light socket.

Remember you take no chances in buying this outfit because our 40 years' experience as experts in polishing dust collecting is behind it.

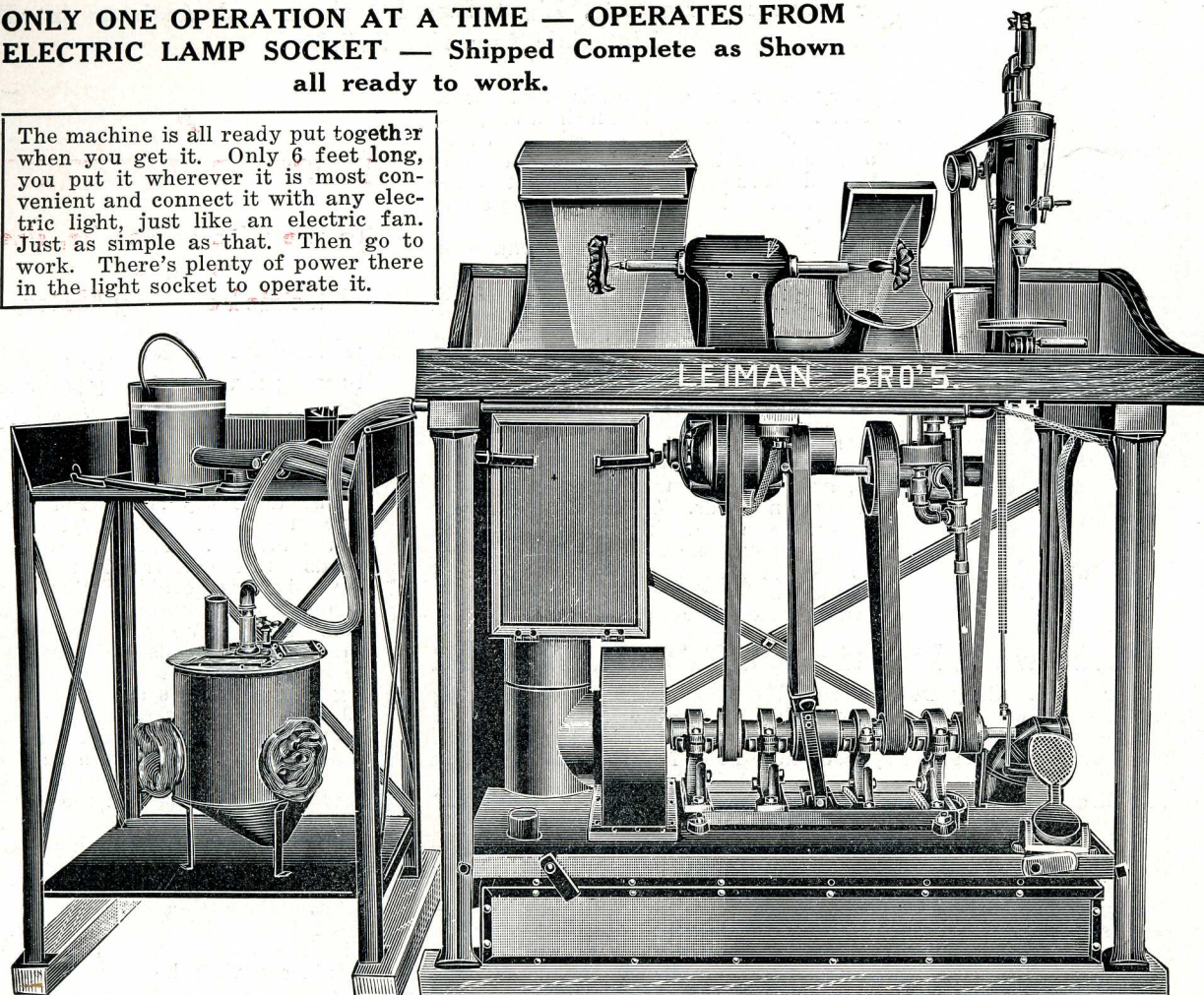
Don't Breathe polish-
ing dust - it's dangerous
Save the Gold, Platinum
or other Precious Metal
dust and recover its value.

THE COMPLETE WORKSHOP — \$340.⁰⁰

OPERATES ON THE ELECTRIC LIGHT
For 110 Volt D. C. or A. C. 60 Cycles 1-2 or 3 Phase

ONLY ONE OPERATION AT A TIME — OPERATES FROM
ELECTRIC LAMP SOCKET — Shipped Complete as Shown
all ready to work.

The machine is all ready put together when you get it. Only 6 feet long, you put it wherever it is most convenient and connect it with any electric light, just like an electric fan. Just as simple as that. Then go to work. There's plenty of power there in the light socket to operate it.



— PATENTED —

The different machines composing this outfit are our standard factory appliances — nothing made light or flimsy to meet a price. What you get here is exactly what you will find in the leading factories of the world — Big wear proof parts each an independent, hard working machine.

In these high rent days this outfit answers a deep yearning on the part of the rent payer because it combines the entire shop in very limited space yet is so arranged as to be the acme of convenience. Nothing in the way of something else. All ready to serve in the most efficient manner at a touch.

DRILL-CHUCK—for drills 0 to 29/64 inch; face plate to chuck 4 inches; foot and hand lever feed, vertical movement 1½ inches; face plate to chuck, 5½ inches.

BLOWER—Suitable for use with the furnace or sandblast; or with the soldering blowpipe.

SAND BLAST—Suitable for sand blasting all pieces of jewelry up to about 3½ inches in diameter.

FURNACE—Suitable for melting about 2 lbs. of metal.

INGOT MOULD—For flat stock 1⅞x 4x¼ inch or 3-16ths inch as desired.

POLISHING—Length of spindle, each side of head including detachable taper points 5½ inches. The right

hand side of the spindle is supplied with an extra taper so that it may be shortened to 3½ inches including the point for use in watch-case polishing and other similar work requiring end buffs. Diameter of spindle ¾ inch; height to centre of spindle 7 inches.

One pair 12-inch Crucible tongs, sheet asbestos for top of iron table, hand blowpipe and box of sand for sand blast with outfits as above mentioned.

We also supply the necessary piece of rubber tubing.

Floor Space Complete about 22x72 inches which includes the separate iron table, furnace and sand blast. Weight for shipment about 600 lbs.

All Operations Quickly Accomplished

No matter what machines you have ever used none have done higher grade work than can be accomplished with this outfit. Each part is very carefully made with an eye to supplying the small repair man with a quality outfit at a price he can afford to pay.

**A Six Foot Shop
for
the Store or Repairer
ANYONE CAN AFFORD
THIS COMPLETE,
CONVENIENT MONEY-
MAKING OUTFIT.
GET ONE !**



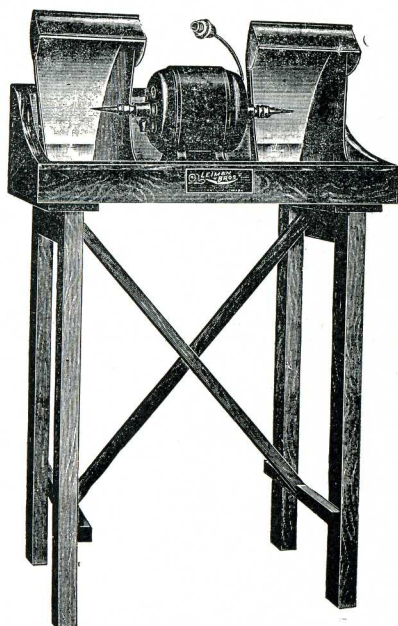
Polishing and Scratch Brush Machine Model 44— Also used for buffing. Equipped with $\frac{1}{3}$ H. P. motor—all bearings are our latest type wool yarn packed self lubricating.

Size 20 x 44 inches.

With iron legs and zinc lined bench.

Length of spindle each side of bearing, including detachable taper point $6\frac{1}{2}$ inches—Height of spindle 7 inches.

PRICE \$125.00
Specify Current.



Electric Polishing and Scratch Brush Machine Model 45— The motor is $\frac{1}{4}$ H. P. for 110 or 220 Volts A. C. 60 cycles, single phase or D. C., speed 1725 R. P. M. Each hood is a dust splasher with electric light fixture.

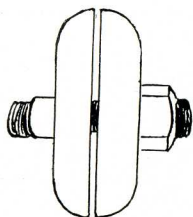
Operates entirely from electric light socket.

Size 20 x 29 inches.

With wood legs and zinc lined bench.

PRICE \$88.00

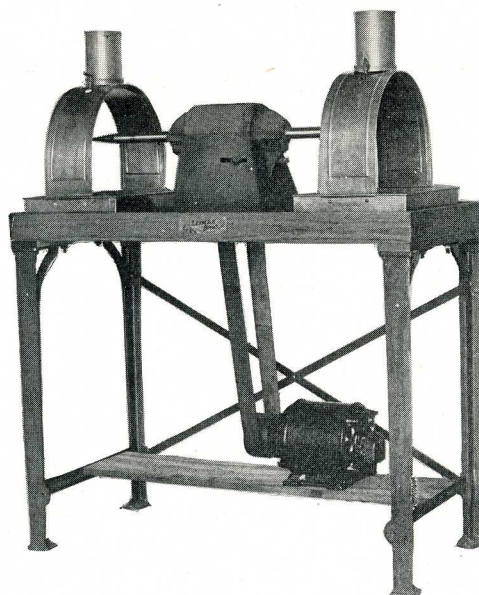
Specify which electric current you have.



Buff Arbor for attaching to spindle of our polishing heads No. 2 and 3.

Specify Right or Left Side.

PRICE \$7.50



Polishing and Scratch Brush Machine Model 40— 1 H. P. Motor. All bearings wool yarn packed self lubricating.

Size 24 x 48 inches.

With iron legs and zinc lined bench.

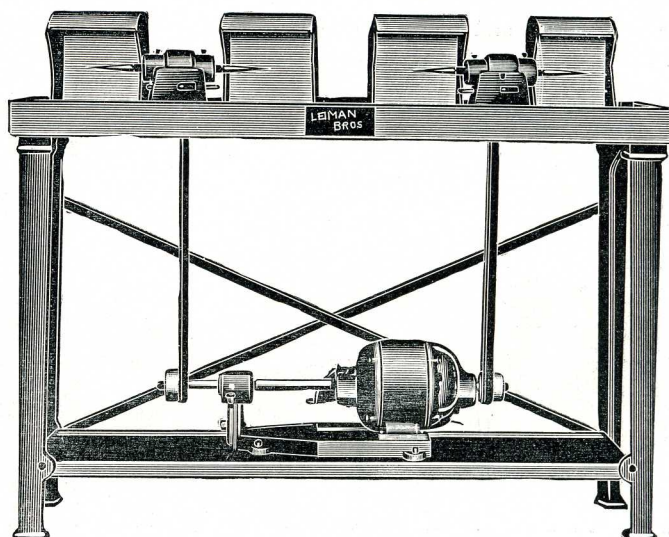
Length of spindle each side of bearing, including taper points 11 inches.

Height to center of spindle 12 inches.

Diameter of spindle $1\frac{3}{16}$ inches.

PRICE \$225.00

With No. 67 Copper hoods as shown on page 9 or suitable hoods for polishing will be supplied.



Model 38N Polishing and Grinding Machine $\frac{1}{2}$ H. P. Motor— all bearings wool yarned packed self lubricating.

Size 19 x 57 inches—Height of spindles 4 inches—Length of spindles over all 16 inches including points.

Iron legs with zinc lined bench.

PRICE \$225.00



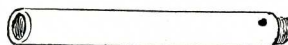
Taper Threaded Brush and Buff Arbor— $3\frac{1}{2}$ inches long fits our polishing heads No. 2 and 3. We have others to fit all other models. Specify which you want and whether left or right hand side.

PRICE \$3.00 each



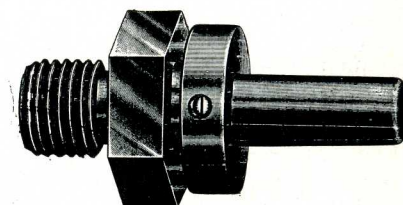
Arbor for Drill Chuck Holds No. 2 drill Chuck. Screws into spindle of our polishing heads No. 2 and 3.

PRICE \$3.00



Spindle extension made for our polishing heads No. 2 and 3— Length 6 inches. One end fits spindle other end takes the taper point. Specify right or left side.

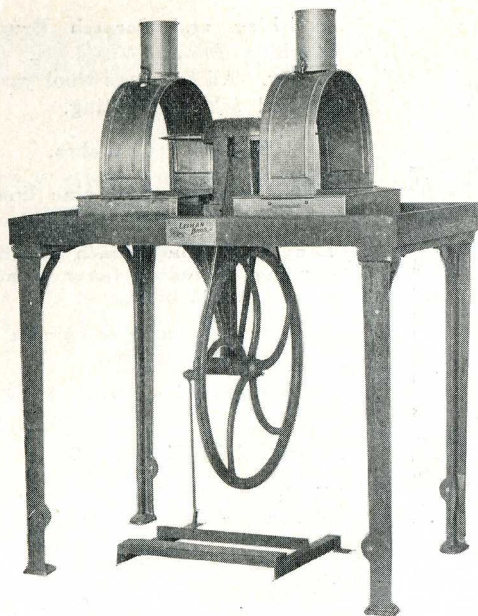
PRICE \$3.00 each



Arbor for holding Ritter style tools— Screws into spindle of our polishing heads No. 2 and 3.

Specify left or right side.

PRICE \$4.00



Foot Power Polishing and Scratch Brush Machine. Floor Space 20x44 inches.

Price \$140.00

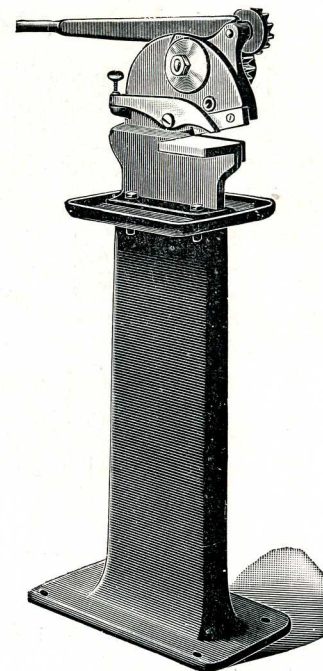
Copper hoods shown are for scratch brushing but suitable hoods will be furnished for polishing.



1/2 H. P. Lap Machine—For Jewelry lapping.

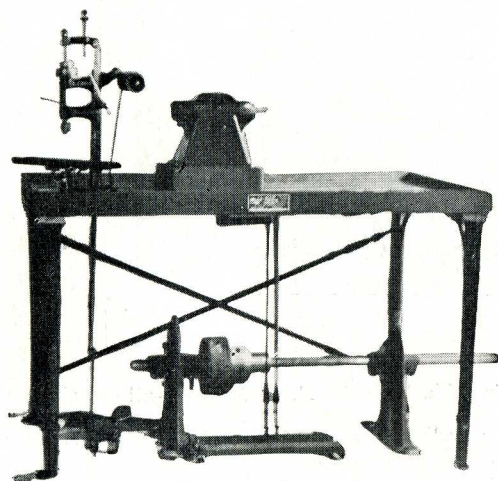
For 2 - 10 in. lapwheels—3/4 in. shaft—floor space 24x48 ins—Price \$175.00

Laps not included.



Metal Cutting Shear—With geared jaws for easy cutting. Cuts flat stock 1/4 in. thick. Cuts rods 3/8 in. diameter. Blades 4 in. long.

PRICE \$45.00



GLASS GRINDING AND DRILLING OUTFIT

for bottle necks, tubes, stoppers, cocks, etc.

Complete with driving shaft and belt..... \$300.00
1/2 H. P. required to operate

Sliding vise for drilling..... 25.00

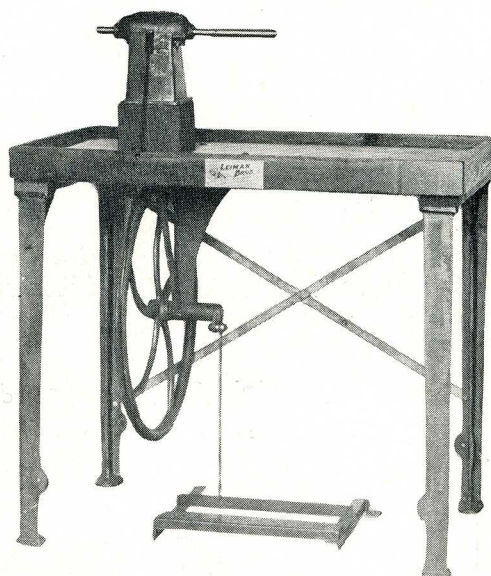
Spindle extension for holding 1/2 round laps 3.00

Hollow taper arbor for spindle..... 7.50

Flange arbor for flat laps, for scoring graduations..... 7.50

1/2 round copper lap..... 7.50

Complete with motor attached, all mounted, and with above accessories..... 500.00



FOOT POWER GLASS GRINDING MACHINE

for bottle necks, stoppers, tubes, etc.

Price \$125

With electric motor attached \$200.00

Spindle extension for holding 1/2 round laps..... \$3.00

Hollow taper arbor for spindle..... 7.50

Flange arbor for flat laps, for scoring graduations..... 7.50

1/2 round copper lap..... 7.50



FLAT GLASS GRINDING MACHINE

for scientific glassware.

Size of bench 40x40 in.

Size of cast iron lapping wheel 30 in. diameter.

Equipped with water and emery feed founts

PRICE \$250

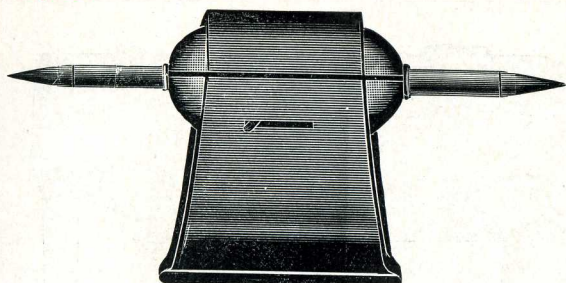
Requires 1 H. P. for operating.

REDUCE PRODUCTION COSTS
with the SAND BLAST

See Page 31

Paint, Enamel, Nickel, Silver or Gold Plate Takes Hold Quicker. You Save Time and Labor on All Goods Made of Metal, Wood, Fibre, Rubber, Glass, Composition or Other Materials.

Uses Same Sand Over and Over Until Entirely Consumed—For Frosting and Mat Finishing on Metals and Glass, Gold, Silver, Brass, Aluminum, Gas and Electric Fixtures, Bottles, Electric Light Bulbs, etc., and Cleaning Castings and Patterns.



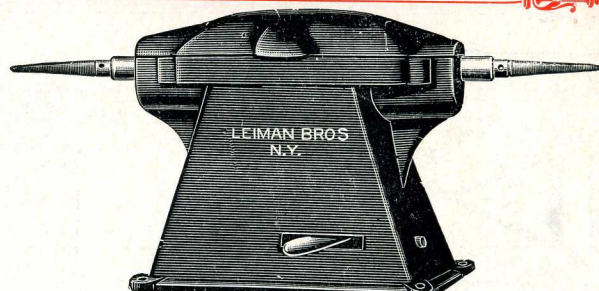
No. 4—Polishing head.

As used with Model 16 and 31 polishing outfit.



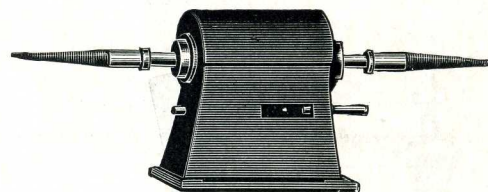
No. 3—Polishing head.

As used with Model B polishing outfit.



No. 2—Polishing head.

As used with Model A polishing outfit.



No. 5—Polishing head.

As used with Model 38 polishing outfits.

**Grinding and
Polishing**

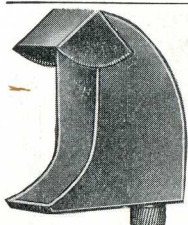
**requires a
Dust Collector
to make it safe.**

See page 1

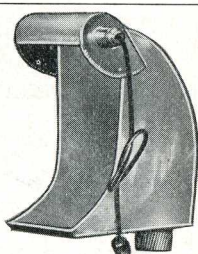
PRICES OF POLISHING HEADS WITH REMOVABLE THREADED TAPER ARBORS.

Size	4	3	2	5
Price	\$58.00	\$25.00	\$35.00	\$25.00
Height to center of spindle—inches	12	7	7 3/4	4
Diameter of spindle—inches	1-3/16	3/4	7/8	9/16
Length of spindle each side of bearing—inches	11	4 1/4	5 1/2	5
Length of spindle over all, including points—inches	37 1/2	18 1/2	24	16

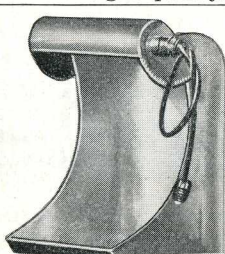
Bearings are of the latest type wool yarn packed containing enough oil for many months of steady operation. Loose and tight pulleys and belt shifter on each head.



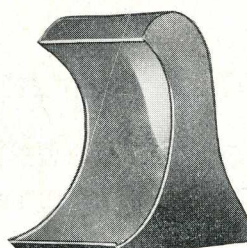
No. 2C



No. 2



No. 19A



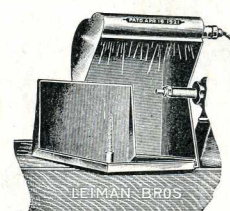
No. 35

No. 36—36B and 37 zinc hoods with removable water pans used with models B—47 & A.

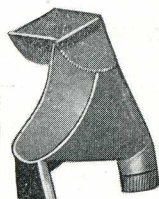
PRICE \$7.50

Price made of Monel Metal — \$12.50

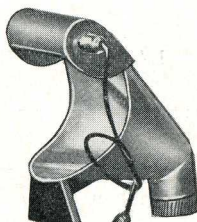
Removable Water Pans only.....\$2.00
Of Monel Metal.....4.00



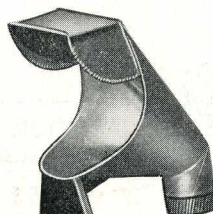
No. 4



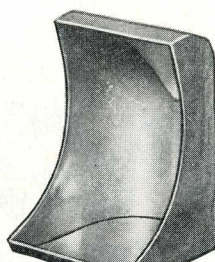
No. 4C



No. 3



No. 3C



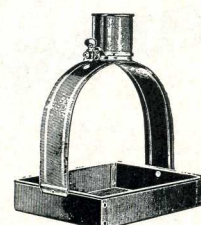
No. 19B

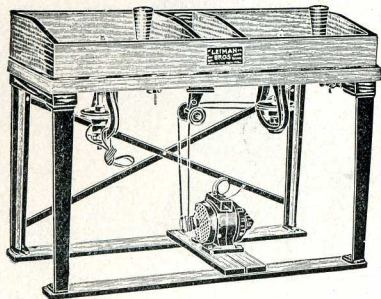
POLISHING DUST HOODS.

Prices made of tin	2C	2	19A	35	4	4C	3	3C	19B
PRICE made of Monel Metal	\$3.00	\$5.00	\$5.00	\$3.00	\$5.00	\$3.00	\$5.00	\$3.00	\$3.00
Width—inches	\$9.00	\$11.00	\$11.00	\$9.00	\$11.00	\$9.00	\$11.00	\$9.00	\$9.00
Height—inches	8 3/4	8 3/4	9 3/4	9 1/2	5 3/4	5 3/4	7	7	9 3/4
Depth—inches	14	14	15	15	12 7/8	12 7/8	13 1/2	13 1/2	15
Used with Polishing Machine Model	11	11 1/4	13	15 1/2	9 1/4	9 1/4	10 1/8	10 1/8	13
	B	B	Splasher only	Splasher only	B	B	A	A	Splasher only

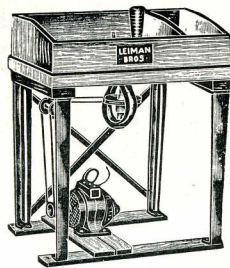
	36	36B	37
Width—ins.	8	8	9 1/2
Height—ins.	13	13 1/4	14 1/2
Depth—ins.	13 1/2	10	14 1/2
Used with polishing machine model	B	47	A

No. 67—Hood for wet scratch brushing made of Monel with drip cup—size 12x15 inches, height 15 inches over all height 21 inches. PRICE \$12.50 Made of Copper \$10.50

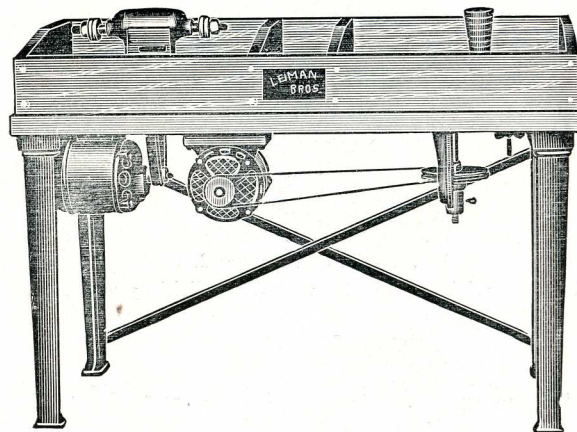




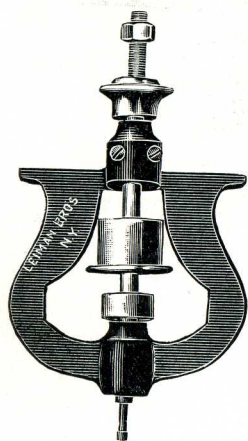
Double Flat Grinding and Lapping outfit with one motor and changeable belts **\$325.00**
With two motors **\$350.00**
Laps extra.



Flat Grinding and Lapping Machine with motor.
PRICE \$175.00
Lap extra.



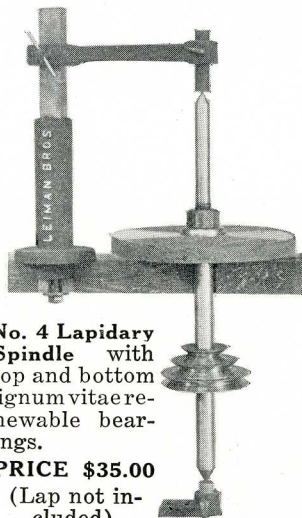
Flat Grinding, Lapping and Horizontal Lathe for splitting or slicing with 2 motors **\$350.00**
With one motor and changeable belts **\$325.00**
Laps extra.



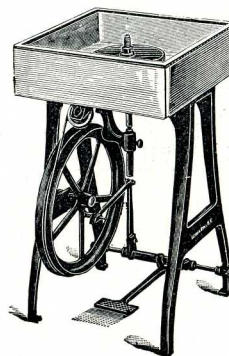
No. 2 Lapidary Spindle with dust proof upper bearing and lignum vitae renewable lower bearing.
PRICE \$35.00



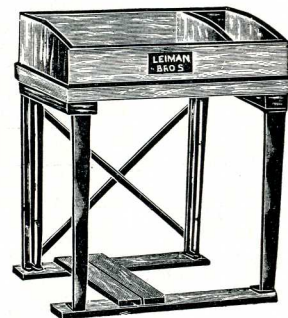
Faceting Tool Rest and Bracket with Scorings.
PRICE \$4.00



No. 4 Lapidary Spindle with top and bottom lignum vitae renewable bearings.
PRICE \$35.00
(Lap not included)



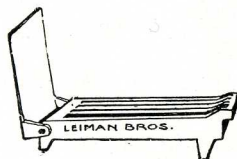
Flat Grinding and Lapping Machine for foot power.
PRICE \$125.00
Lap extra.



Single Lapidary Work Bench
See Prices Below.



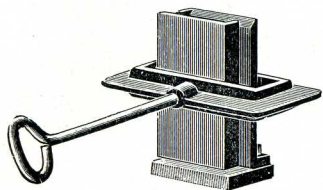
No. 1 Ingot Mould—For Flat Stock.
1 7/8 x 4 x 1/4 in.
1 7/8 x 4 x 3/16 in.
PRICE \$4.00



No. 5 Ingot Mould—3 square rod grooves
5 1/4 x 1/4 x 5/16 or 3/8 in.
Plate, 5 1/4 x 1/4 x 1 in.
PRICE \$8.00

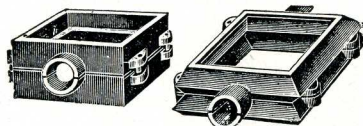


No. 3B Ingot Mould—3 square rod grooves, 1/4, 5/16, 3/8 in. 11 inches long.
PRICE \$6.00



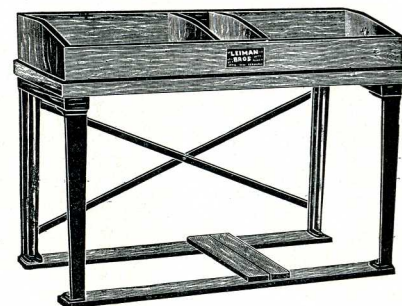
No. 2 Ingot Mould
PLATE
PRICE \$8.00

3x6x5/16 in.
3x6x3/8 in.
3x6x1/2 in.



Jewelers' Casting Flasks
\$4.00 Each

- No. 1—2x2 3/4 in. straight sides.
No. 2—2 1/2 x 2 3/4 in., V straight sides.
No. 3—4x5 in., V sides.
No. 4—4x6 in., V sides.
No. 5—2 1/2 x 3 1/4 in., straight sides.
No. 6—3 1/2 x 4 1/2 in., straight sides.
No. 7—4 1/2 x 5 in., straight sides.
No. 8—4x6 in., straight sides.



Double Lapidary Work Bench.
See Prices Below.

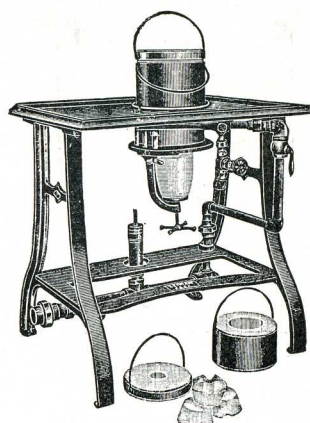
LAPIDARY WORK BENCHES

	Double	Single
PRICE	\$60.00	\$40.00
Floor space, inches	23x58	23x30
Height, inches	26 3/4	26 3/4
Large compartment, inches	20x20	20x20
Small compartment, inches	6x20	6x20
Compartment depth, inches	7	7

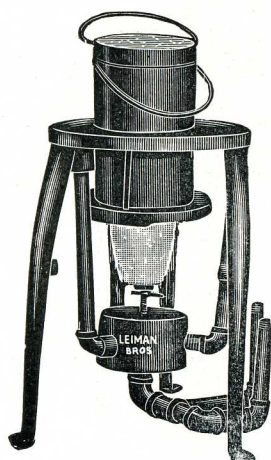
Wood body with iron legs.

No. 3 Ingot Mould—For Plate and Square Wire. 2 square grooves, 1/4, 5/16, 3/8 in. **\$7.00**
3 grooves as above, also 1/4 x 1 x 11 in. flat **\$10.00**

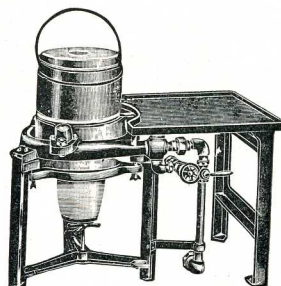
GAS FURNACES



No. 2 Melter



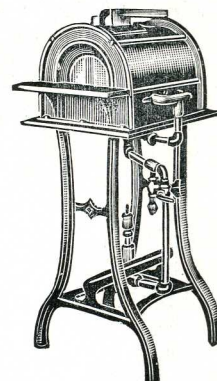
No. 2A Melter



No. 3 Melter

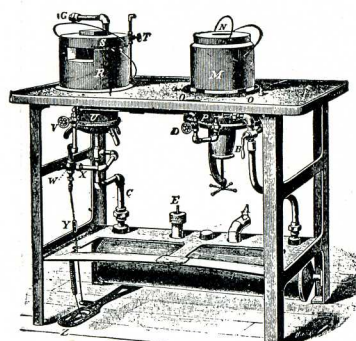


Oven Furnace



Muffle Furnace

MELTERS				OVEN FURNACES						MUFFLE FURNACES			
Furnace No.	3	2A	2	0	00	1	2	16	17	1	2	3	4
Kind of work	Melting about 25 lbs.	About 5 to 10 lbs.	About 5 to 10 lbs.	Forging, annealing, hardening						Enamelling			
Heating space	holds No. 8 Black lead Crucible	holds 6 inch Crucible	holds 6 inch Crucible	1x1x2	1½x2x4	3x2x4	5½x3x6	8x3¾x12	4¾x4¾	3¼x2x5	3¼x2x6½	3¼x6¼x9	6½x3¾x12
Gas consumed, cubic feet per hour	250	70	125	35	75	100	180	110	100	45	45	125	170
Floor space, ins.	26x38	17x17	24x29	Bench space 6x8½	Bench space 8x11	24x20	24x20	26x24	24x22	Bench space 15x13	Bench space 15x15	24x22	27x25
PRICE	\$90.00	\$55.00	\$70.00	\$12.00	\$24.00	\$55.00	\$70.00	\$95.00	\$80.00	\$28.00	\$30.00	\$80.00	\$100.00
Size of blower required	D	C	C	B	C	C	D	D	C	B	B	C	D



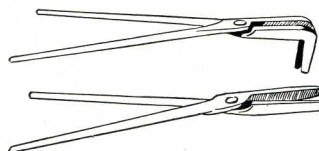
Melting and Annealing Furnace
—holds 6 inch crucible and annealing slot 4 x 2 inches. Consumes 150 cu. ft. gas per hour floor space 36x41 inches.

PRICE \$130.00

Requires size D Blower.

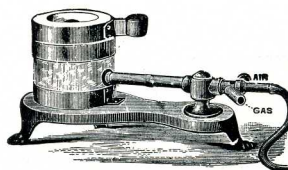


No. 41 Melter—
Melts about 2 lbs.
PRICE \$10.50
Requires size B Blower.



Crucible Tongs
Straight or Curved. About 18" long.

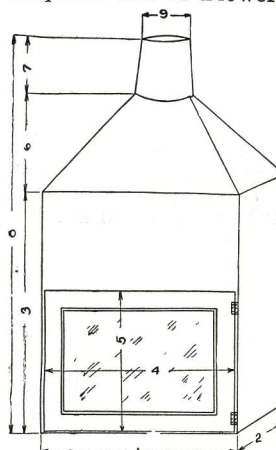
PRICE \$1.50



No. 40A Melter—Holds No. 00 Crucible.

PRICE \$7.50

Requires size A Blower.



Acid Refining Hood of galvanized iron with glass door. 12x18 inches—38½" over all

Door 14½x17½"

PRICE \$11.50
Made of monel metal resisting corrosion.

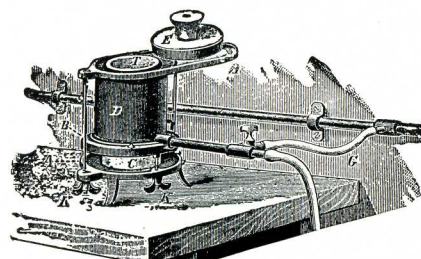
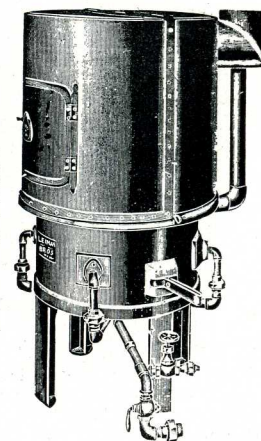
PRICE \$22.00

SWEEPS FURNACE

Holds about a bushel of sweeps. All combustion enclosed in hood as shown.

Price \$135.00

Requires size D Blower.



Little Giant Melter—Holds 4 inch crucible. Melts about 2 lbs.

PRICE \$12.00

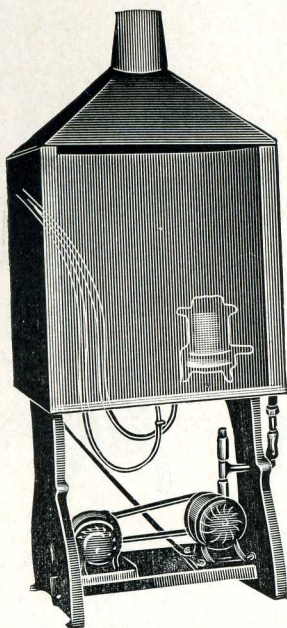
Requires size B Blower.

**SEE PAGE 22
FOR BLOWERS TO
OPERATE ALL GAS
FURNACES AND
APPLIANCES**

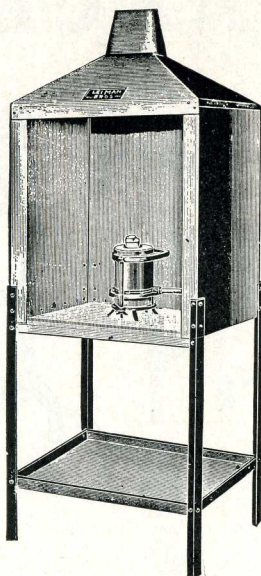


Sweeps Reducing Stove—No gas or air required. Uses flue with very weak draft. Handles a shovelful at a time. Floor space 20x30 inches.

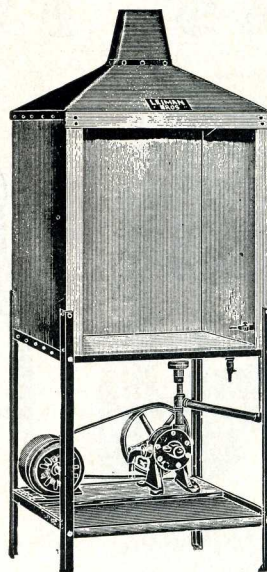
PRICE \$15.00



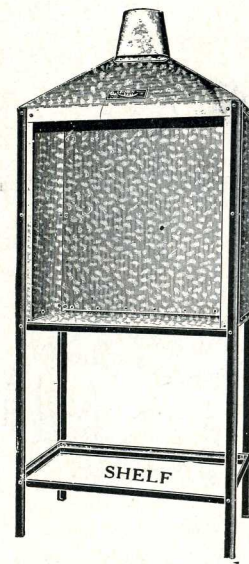
Little Giant Melter Metal Outfit.
Asbestos Covered Table.
Without Hood With Hood
PRICE \$146.00 \$157.00
Size 20 x 27½ ins.
Height over all 73 ins.
Upsliding door on hood \$7.50 extra.
Size B blower with 1/3 H. P. Motor
used—piped to furnace and gas blow
pipe.



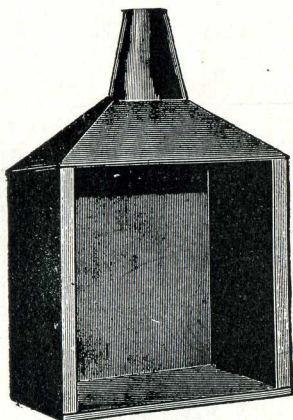
Little Giant Melter with Metal Smoke Hood.
Asbestos Table Top.
Size 20 x 27½ ins.
Height over all 73 ins.
PRICE \$35.00
Upsliding door on hood, add \$7.50



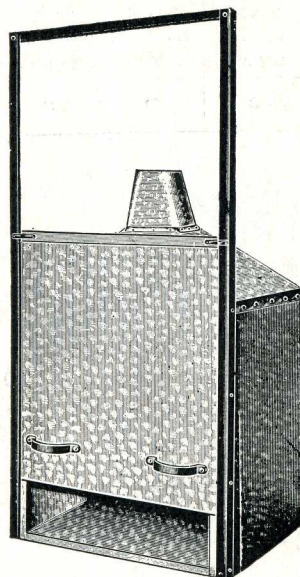
Metal Furnace Hood.
Asbestos Covered Table.
With size B blower and 1/3 H. P. Motor. Piped with outlet for a Little Giant, No. 40A or 41 melting furnace, one to sixteen gas blow pipes, or a sand blast, etc.
Size 20 x 27½ ins.
Height over all 73 ins.
PRICE \$146.00
Upsliding door on hood add \$7.50



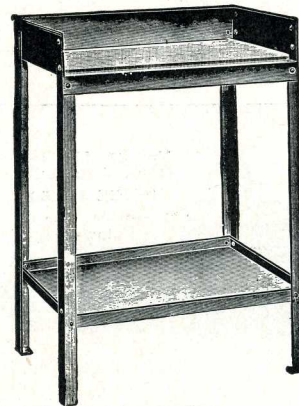
Metal Smoke Hood.
Asbestos Covered Table.
For use for melting, annealing, soldering, casting, etc.
Size 20 x 27½ ins.
Height over all 73 ins.
PRICE \$23.00
Upsliding door on hood, add \$7.50



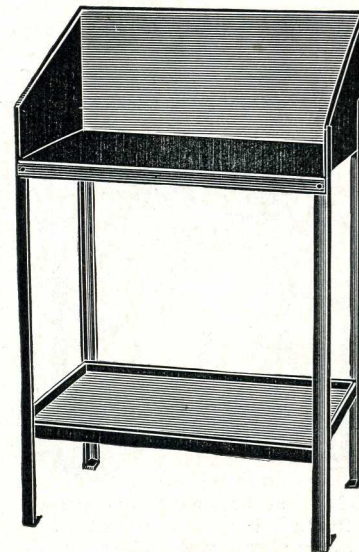
Metal Smoke Hood.
With Asbestos on Shelf.
For melting, annealing, soldering, casting, etc.
Size 20 x 27½ ins.
Height over all 43 ins.
PRICE \$15.00
Can be placed on a table, shelf or on wall brackets.
Upsliding door on hood, add \$7.50
Also furnished without the bottom to fit over a No. 2 Melter.
PRICE \$11.50
Upsliding door \$7.50 extra.



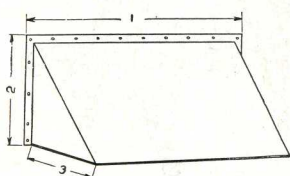
Metal Smoke Hood.
With upsliding door and sheet asbestos.
Size 20 x 27½ ins.
Height over all 43 ins.
PRICE \$22.50
Without door \$7.50 less.
Without bottom \$3.50 less.



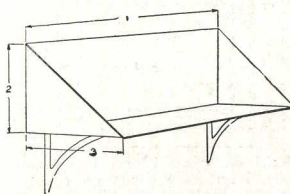
Straight Side Iron Work Table.
For melting, soldering, etc.
With sheet asbestos.
Height 30 ins.
Back and sides 4 ins. high.
Floor Space 16 x 24 ins.
PRICE \$12.50



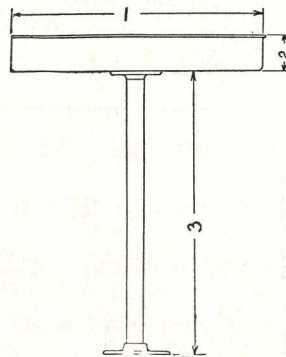
Slanted Side Iron Work Table.
For melting, soldering, etc.
With sheet asbestos.
Height 30 ins.
back 11 ins. high.
Floor space 16 x 24 ins.
PRICE \$15.00



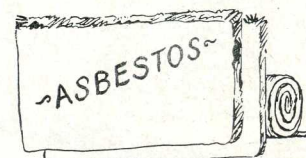
Metal Wall Hood.
For melting, soldering, etc.
Size 15 x 27½ ins.
Height at back 15 ins.
PRICE \$10.00



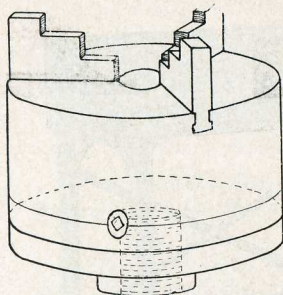
Metal Wall Tray.
For melting, soldering, etc.
Size 15 x 27½ ins.
Height of back 15 ins.
With sheet asbestos and brackets.
PRICE \$12.50



Revolving Tray.
Of metal for annealing, oxidizing, etc.
Diameter 18 ins.
Height of rim 6 ins.
Height over all 36 ins.
PRICE \$12.50



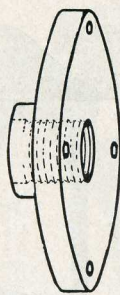
Soft Sheet Asbestos.
14 x 24 inches.
½ inch thick.
PRICE \$1.50
Extra hard like slate \$3.20



Lathe Chucks either inside or outside jaws furnished

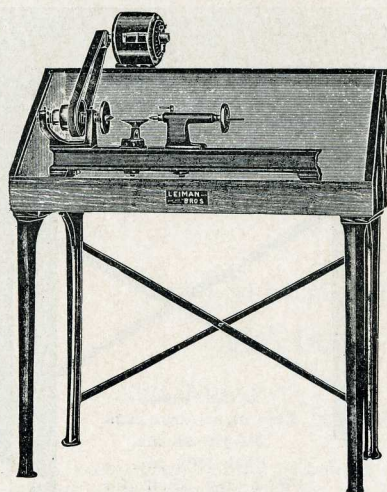
Lathe Chucks No.	2	3
Outside Diameter ins.	2	3
Holds Rods & Drills, Sizes ins.	1/2	1/2
Holds discs ins.	2	3
PRICE With inside and outside jaws	\$30.00	\$30.00
PRICE With 2 inside or outside jaws	\$20.00	\$20.00

Arbor and fitting extra.
See next picture above showing arbor.



Flat arbor for lathe chucks screws onto head stock.

PRICE \$5.00
(fitting extra)



Bench Speed Lathe Motor Driven—Each lathe is equipped with either cone or tight and loose pulleys, face plate, small and large T rests and wrench.

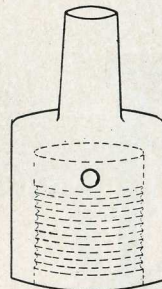
2 sizes—8 in swing 8 or 20 in. between centers.

Bed 2 or 3 ft. long, 1/2 in. hole in spindle.

Bench, 25 x 50 inches, zinc lined with iron legs.

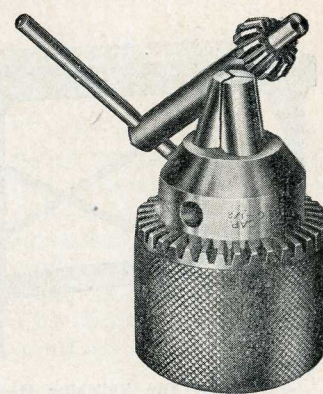
Motor 1/4 H. P. 60 cycles A. C. or D. C.

PRICE \$160.00



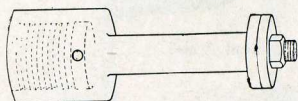
Hollow Lathe Arbor for drill chucks screws onto head stock.

PRICE \$5.00



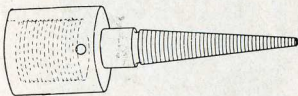
Drill Chucks

No.	1	2
Size of Drills	0 to 13/64	0 to 21/64
Price	\$4.50	\$4.50



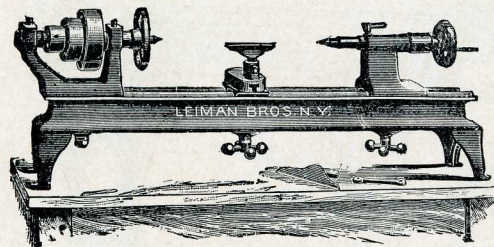
Lathe Saw Arbor—Screws onto head stock. Size of hole in saws to be 1/4 ins.

PRICE \$7.50



Lathe Buff Arbor—Screws onto head stock.

PRICE \$7.50

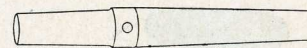


Bench Speed Lathe—With 3 step cone pulley face plate, small and large T rests and wrench.

2 sizes—8" swing—8 or 20 in. Centers.

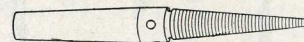
Bed 2 or 3 ft long—1/2 in. hole in Spindle.

Price \$75.00—Specify two or three foot lathe.



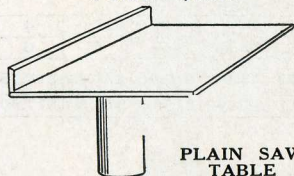
Lathe Drill Chuck Taper Arbor—Fits into lathe head stock.

PRICE \$3.00



Lathe Buff or Brush Taper Arbor—Fits into lathe head stock.

PRICE \$3.00

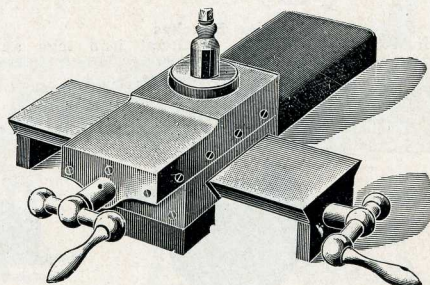


PLAIN SAW TABLE

Size 4 x 4 inches.

Specify diameter and length of stem wanted.

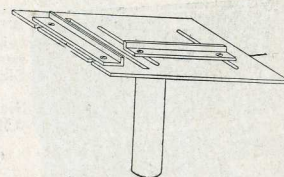
PRICE \$3.50



Slide Rest—For 8 inch swing lathes.

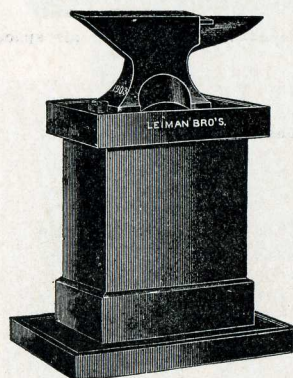
PRICE \$22.00

Specify two or three foot lathe.



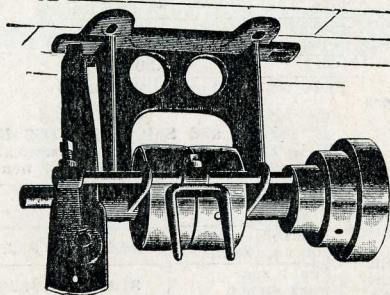
Lathe Saw Table—Adjustable. Size 6 x 6 inches. Specify diameter and length of stem wanted.

PRICE \$7.50



Anvil and Shock-Absorbing Anvil Block

50 lb. anvil and block.....\$24.50
3 lb. hammer.....1.75
5 lb. hammer.....2.00



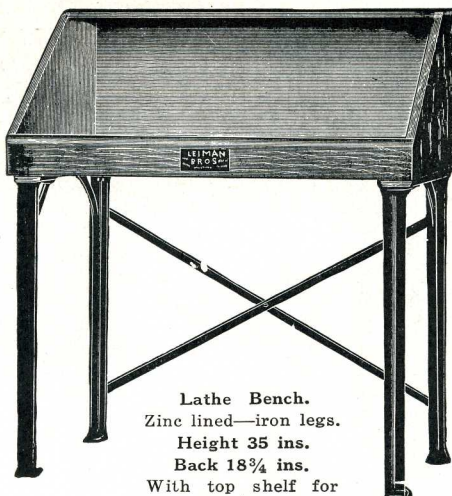
Lathe Counter Shaft—8" drop—5" tight and loose pulleys with 3 step cone pulley.

PRICE \$15.00

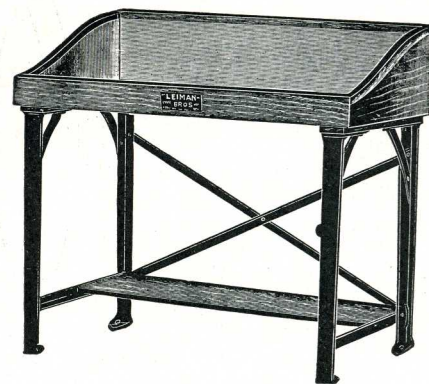
**COMPLETE MOTOR
DRIVEN OUTFITS FOR
ALL OPERATIONS IN
LIGHT METAL
WORKING**



Flat Top Polishing Bench.
Zinc lined—iron legs.
Height 35 ins.



Lathe Bench.
Zinc lined—iron legs.
Height 35 ins.
Back 18 3/4 ins.
With top shelf for motor.



High Back Polishing Bench.
Zinc lined—iron legs.
Height 35 ins. Back 9 1/2 ins.

	No. 1	No. 2	No. 3	No. 4
Size	30x60	24x48	20x44	20x29
PRICES				
Flat top	\$45.00	\$32.00	\$30.00	\$28.00
High Back	\$55.00	\$38.00	\$36.00	\$34.00
Lathe Bench	\$60.00	\$40.00	\$38.00	\$36.00



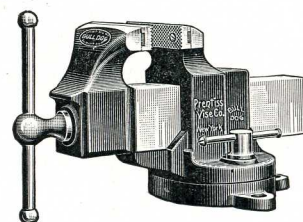
Stools
18" high—for work benches \$2.00
24" high—for polishers \$2.50
30" high—for drillers \$2.75



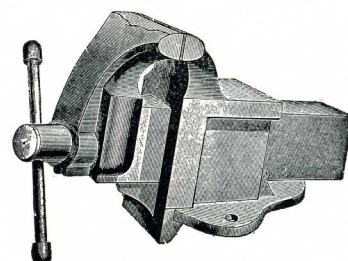
Chairs
18 in. high—backs 11 ins high, strongly reinforced with wire stays.
PRICE \$3.00



Vise Benches
Hard wood top with sectional iron legs and tool drawer.
Size 17 x 33 ins.
Height 33 ins.
PRICE \$15.00

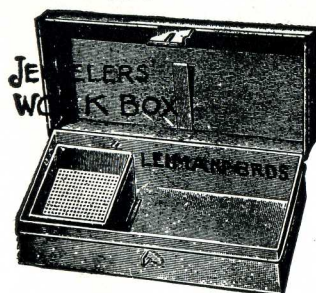


Swivel Vise.



Stationary Vise.

Vises					
Jaws, ins.	2	2 1/2	3	3 1/2	4
Opens ins.	3	3 1/2	4 1/2	5	6
Prices	\$8.25	\$9.00	\$10.00	\$11.25	\$12.75
Stationary					
Swivel	\$10.50	\$12.00	\$13.00	\$15.00	\$17.00



Jewelers Work Box—
With one inside container having removable perforated top.
Size of box ins. 4 1/2 x 8 1/2
—2 1/2 ins. deep.
Size of container ins. 2 3/4 x 2 3/4 —2 1/4 ins. deep.
PRICE 85c
Container alone 30c

SKINS for Setters BENCHES

Apron Skins—For diamond setters used with our work benches.
PRICE \$2.50

The tray is made of wire cloth bound in metal—size 9 x 15 inches. The edges are turned up all around and there is a suitable clearance underneath. When you drop a tool into the tray the filings fall through the wire mesh into the pan underneath. Set of two \$2.00
Used in Jewelers Work Bench drawer or pan.

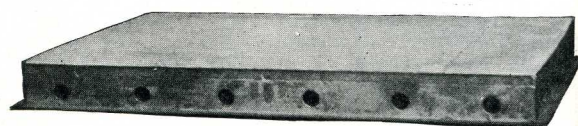


Engraving Balls

	1	2
Inches diameter	5 1/4	4 1/4
Inches between jaws	3	2 3/8
Inches deep between jaws	2 1/4	2
Price	\$3.00	\$2.50
Pads for holding balls	\$3.00	

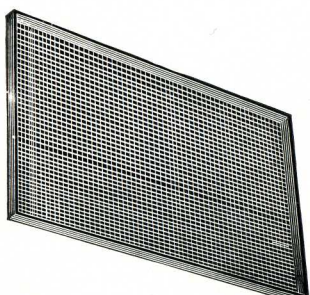
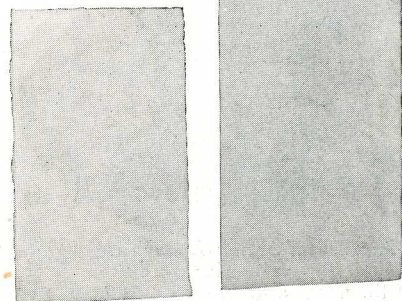
Hard and Soft ASBESTOS BOARD
1/4 and 1/2 inch thick for annealing, melting and soldering tables and work bench tops.

	Hard		Soft
	1/4"	1/2"	1/2"
For iron tables and smoke hoods	\$1.60	\$3.20	\$1.50
For 1 seat work bench	\$1.60	\$3.20	
For 2 seat work bench	\$3.20	\$6.40	



Asbestos and Metal Bench Tops—With insulating air space.
Size 15 x 30 inches.
PRICE \$10.00
For use with work benches.

Asbestos Board



Gold Saving Tool Tray for Jewelers Work Bench

LEIMAN BROS.

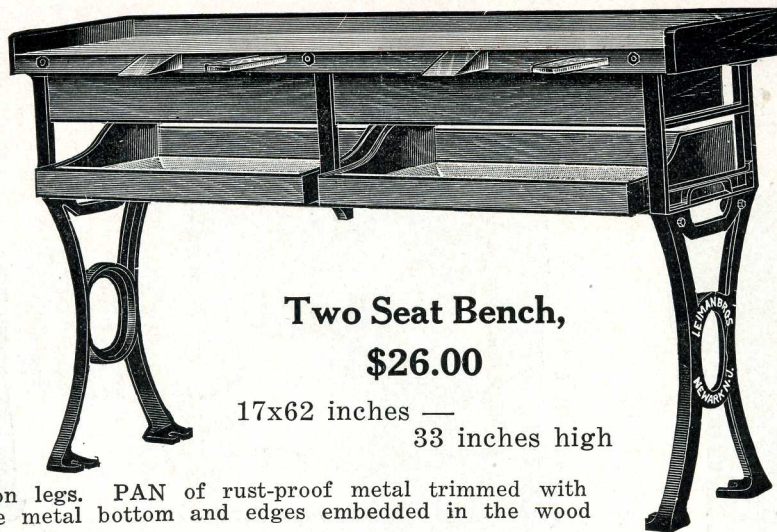
Reversible Top Work Benches

PATENTED
Reversible Top Means Longer
Life.

Take the rear strip off the top and put it on the front and turn the bench all around—reversing the pan and drawer—you have a new bench front—new holes for file pin and arm rest are all there.

Permanent Slides for Drawer and Pan

are built-in features of the iron legs. PAN of rust-proof metal trimmed with wood. Rounded corners of the metal bottom and edges embedded in the wood conserve your metal filings.



Two Seat Bench,
\$26.00

17x62 inches —
33 inches high

FOR JEWELERS,
DENTISTS, AND
ALL ARTISANS

TOPS of 2 inch thick, hard, close-grained maple in several pieces—also drawn together with long, threaded bolts through the centre of the boards from front to rear of the bench. The bolts may be tightened at will.

THE BIG DRAWER, full width of the bench, gives much needed space for tools. Lower legs detachable for shipping.

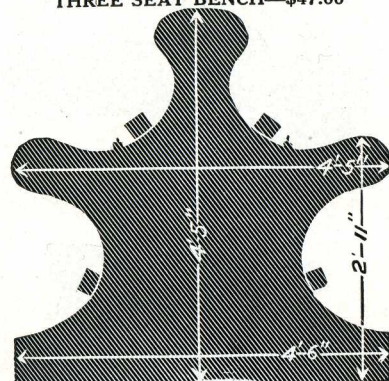


THREE SEAT BENCH—\$47.00

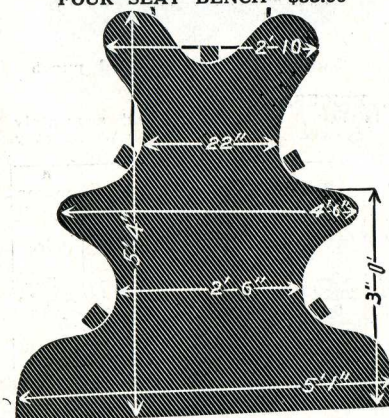


**One Seat
Bench**
\$16.00

17x33 inches —
33 inches high



FOUR SEAT BENCH—\$53.00



FIVE SEAT BENCH—\$59.00

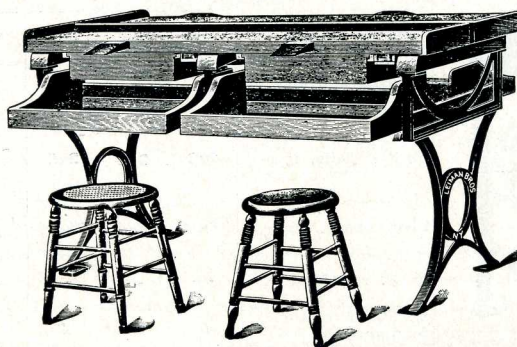
Engravers and Setters Benches—Hard close grain maple tops. Drawer and filing pin at each seat. Fastens to wall with 2 legs at front.

Sizes	3	4	5
Width at Wall	59	54	61
Wall to front centre	34½	53	57½
Prices	\$47.00	\$53.00	\$59.00



**Three Seat
Bench**
\$39.00

17x90 inches
33 inches high.



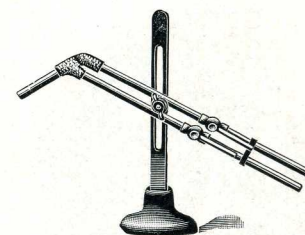
**FOUR SEAT TWIN STYLE
BENCH — \$52.00**

(Stools not included)
Prices of stools on page 14

35x62 inches—33 inches high
15



**Gas
Blow Pipe**



Gas Blow Pipe and Stand

No.	8F	8E	8C
Diam. of flame, ins.	7/8	1/2	3/8
Price	\$3.50	\$3.00	\$2.00
Price with pilot	\$4.00	\$3.50	\$2.50
Stand extra	\$2.00	\$2.00	\$2.00



Electric Bench Lamp

For Evening, Dark Days or
Inside Work Where Daylight
Is Not Available

Supersedes the Drop Light and the Cumbersome Gooseneck Light.

A turn of the thumbscrew adjusts to any position. The shade protects the eyes.

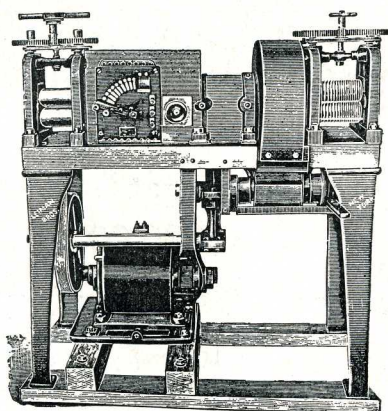
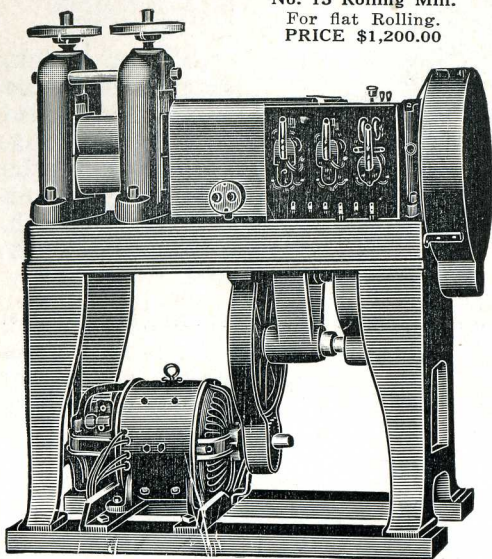
\$3.00

Size of base, 4 inches diameter.

LEIMAN BROS. SUPER-HARD CERTIFIED ROLLING MILLS

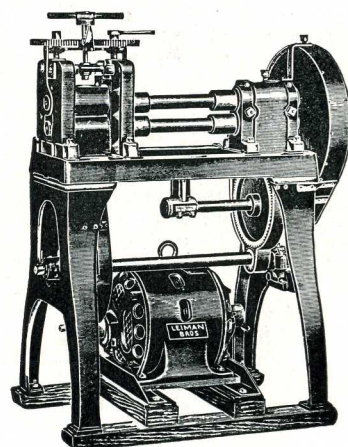
FOR ROLLING GOLD, SILVER, WHITE GOLD, PLATINUM, BRASS, COPPER, ALUMINUM, LEAD, SOLDER, ETC.

No. 15 Rolling Mill.
For flat Rolling.
PRICE \$1,200.00

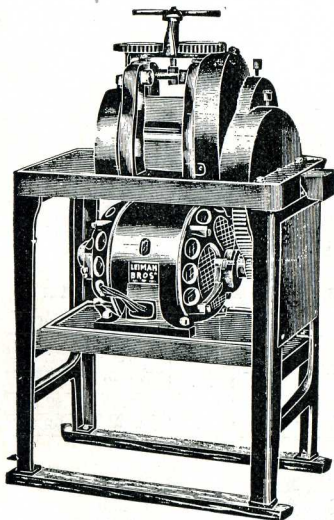


No. 7 Rolling Mill.

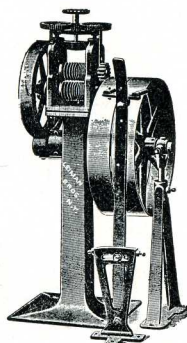
For flat and square wire rolling.
PRICE \$990.00



No. 13 Rolling Mill.
For flat rolling.
PRICE \$675.00

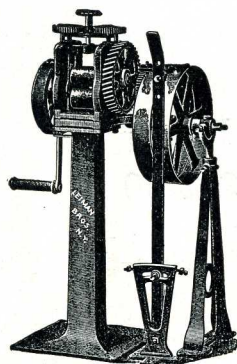


No. 9 Rolling Mill.
For flat rolling.
PRICE \$525.00

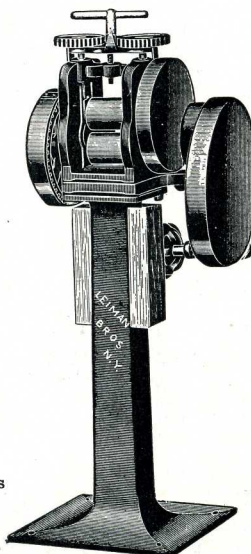


No. 4 Rolling Mill.
With loose and tight pulleys for square wire rolling also furnished motor driven if wanted.

PRICE \$295.00
with Motor \$395.00



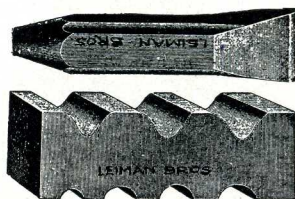
No. 5 Rolling Mill.
With loose and tight pulleys for flat rolling.
PRICE \$275.00



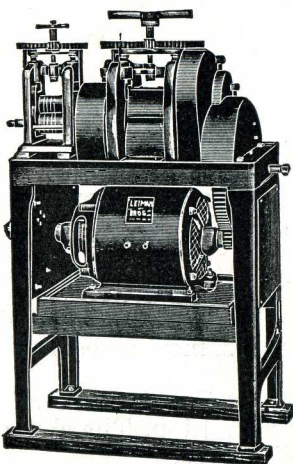
No. 5 Motor Driven Rolling Mill
For flat rolling.
PRICE \$400.00



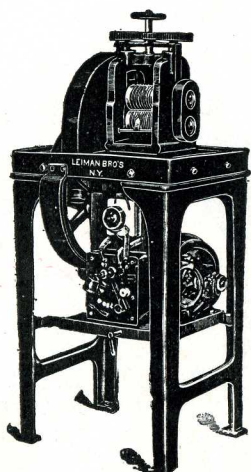
Ring Bender—With 2 dies and 4 sizes
PRICE \$15.00



Ring Bending Block and punch
PRICE \$5.00



No. 14 Rolling Mill.
For flat and square wire rolling.
PRICE \$625.00



No. 8 Rolling Mill. For square wire rolling.
PRICE \$490.00

ROLLING MILL DIMENSIONS, PRICES, ETC.

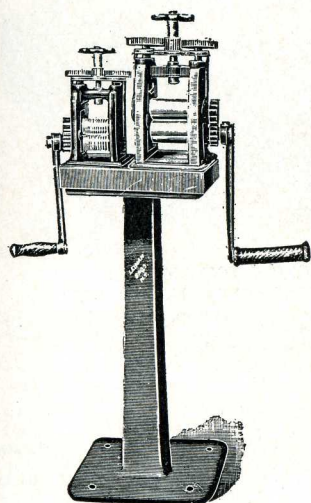
These Rolling Mills are very carefully made all parts being ground true and accurately fitted—Rolls are of a special grade of steel and are guaranteed for the work for which they are intended.

Rolling Mill No.	15	7	13	9	14	8	5	5 motor driven	4	4 motor driven
Kind of Rolling	flat	flat and wire	flat	flat	flat and wire	wire	flat	flat	wire	wire
Number and size of square wire grooves	—	19—.307 to .040	—	—	10—.261 to .036	13—.265 to .045	—	—	13—.265 to .045	13—.265 to .045
Size of rolls, ins.	4x6	3x5	3x5	2 3/4 x 4 1/4	2 3/4 x 4 1/4 wire 2 1/4 x 3	2 3/4 x 4 1/4	2 3/4 x 4 1/4	2 3/4 x 4 1/4	2 3/4 x 4 1/4	2 3/4 x 4 1/4
Floor space, ins.	36x72	24x48	24x36	17 1/2 x 27 1/2	17 1/2 x 27 1/2	16x20	22x24	20x24	22x24	22x24
H. P. required.	—	—	—	—	—	—	1	—	3/4	—
H. P. of motor furnished	5	3	3	2	2	1	—	1	—	3/4
PRICE	\$1200.	\$990.	\$675.	\$525.	\$625.	\$490.	\$275.	\$400.	\$295.	\$395.

LEIMAN
BROS.

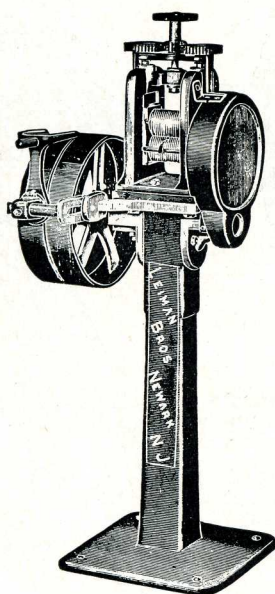
SUPER-HARD CERTIFIED ROLLING MILLS

for rolling Gold, Silver, White Gold, Platinum, Brass, Copper, Aluminum, Lead, Solder, etc.



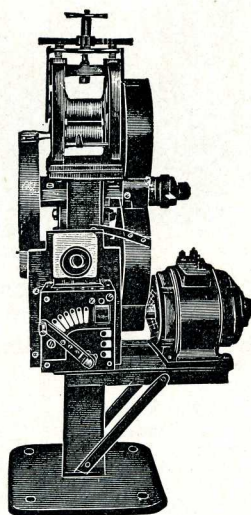
No. 11. Rolling Mill—For flat and square wire rolling.

PRICE \$140.00



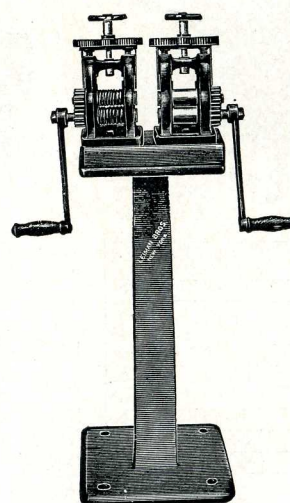
No. 6 Rolling Mill—For fine square wire rolling.

PRICE \$150.00



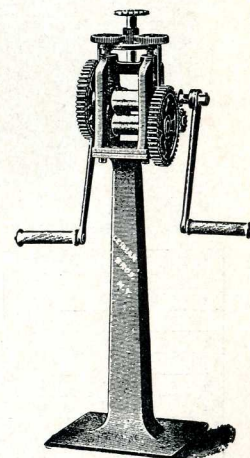
No. 6 Rolling Mill Motor Driven For fine square wire rolling.

PRICE \$275.00



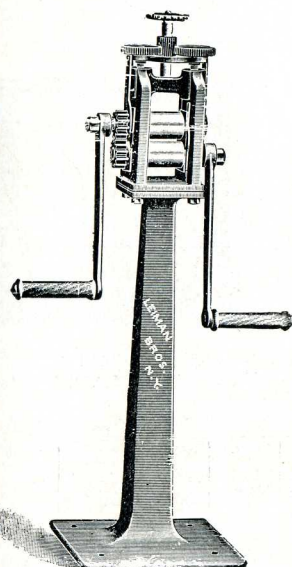
No. 12 Rolling Mill—For flat and square wire rolling.

PRICE \$130.00



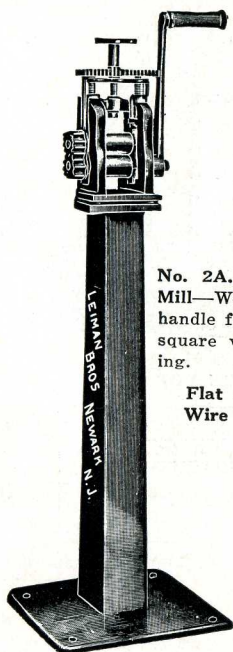
No. 3 Rolling Mill—With double gearing for flat or square wire rolling.

Flat \$89.00
Wire \$109.00



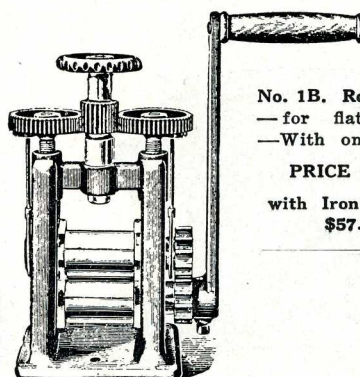
No. 2. Rolling Mill—For flat or square wire rolling.

Flat \$69.00 Wire \$89.00



No. 2A. Rolling Mill—With one handle for flat or square wire rolling.

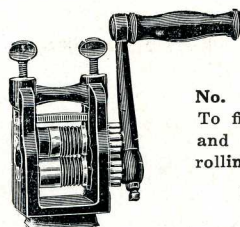
Flat \$59.00
Wire \$79.00



No. 1B. Rolling Mill—for flat rolling. —With one handle.

PRICE \$47.00

with Iron Column \$57.00



No. 1. Rolling Mill—To fit in a vise for flat and fine square wire rolling.

PRICE \$35.00

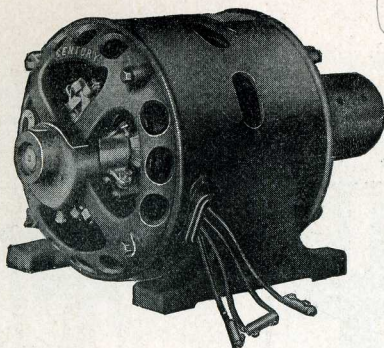


SEPARATE ROLLS for all of our mills

ROLLING MILL DIMENSIONS, PRICES, ETC.
These rolls are hardened by our unique certified process which insures the users' satisfaction. This combined with accuracy to the final degree in cutting and fitting the machine parts account for our rolling mill supremacy.

Rolling Mill No.	11	6	Motor driven 6	12	3	2	2A	1B	1
Kind of rolling	Square wire and flat	Fine Square wire	Fine Square wire	Square wire and flat	Square wire or flat	Square wire or flat	Square wire or flat	Flat	Square wire and flat
Size of rolls, ins.	flat 2x3 wire 1½x2	2¼x3	2¼x3	1½x2	2¼x3	2¼x3	1½x2	2x3	1¼x2
Number and size of Square wire grooves	8 .210 to .030	24 .036 to .015	24 .036 to .015	8 .210 to .030	10 .261 to .036	10 .261 to .036	8 .210 to .030	—	8 .067 to .020
Floor space, ins.	14x23	—	—	14x23	14x26	14x26	14x26	14x20	—
PRICE	\$140.00	\$150.00	\$275.00	\$130.00	Flat \$89.00 Wire \$109.00	Flat \$69.00 Wire \$89.00	Flat \$59.00 Wire \$79.00	As shown \$47.00 With iron post \$57.00	\$35.00

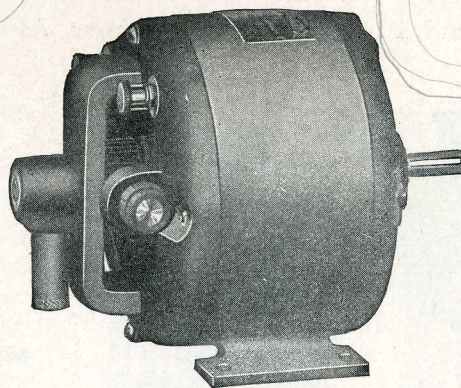
Mill No.	Square Wire Pair	Flat Pair
1	\$25.00	
B1		\$38.00
2	\$69.00	\$50.00
2A	\$49.00	\$35.00
3	\$69.00	\$50.00
4	\$130.00	
5		\$110.00
6	\$97.00	
7	\$190.00	\$150.00
8	\$130.00	
9		\$110.00
11	\$49.00	\$38.00
12	\$49.00	\$35.00
13		\$150.00
14	\$69.00	\$110.00
15		\$200.00



ELECTRIC MOTORS

H. P.	1750 R.P.M. A.C.	1200 R.P.M. D.C.	1200 R.P.M. A.C.	1200 R.P.M. D.C.
1/8	\$21.00	\$19.00	\$26.00	\$20.00
1/6	23.00	22.00	32.00	22.00
1/4	27.00	25.00	36.00	30.00
1/3	29.00	30.00	51.00	49.00
1/2	41.00	49.00	59.00	58.00
3/4	51.00	58.00	70.00	64.00
1	53.00	64.00	78.00	81.00
1 1/2	71.00	91.00	97.00	99.00
2	83.00	99.00	106.00	106.00
3	110.00	109.00	149.00	162.00
5	146.00	169.00	196.00	190.00

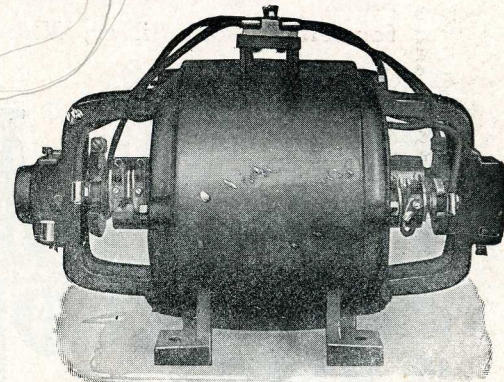
Speed approximate only—Prices include pulley. Subject to change. A.C. means Alternating Current 60 Cycles, one, two or three phase 110 or 220 Volts. D.C. means Direct Current 110 or 220 Volts. Specify which you want.



ELECTRIC DYNAMOS
FOR PLATING AND STRIPPING

State work to be done, material and quantity.

H. P. Required	For Plating 6 Volts Amp.	Price	For Stripping 12 Volts Amp.	Price
1/3	33	\$65.00	16	\$65.00
1/2	50	72.00	25	72.00
3/4	66	98.00	33	98.00
1	83	110.00	41	110.00
1 1/4	116	136.00	58	136.00

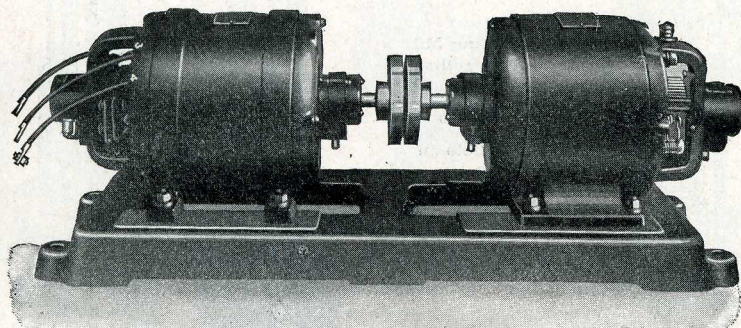


ELECTRIC DYNAMOTOR
A COMPACT ARRANGEMENT.

Give particulars as mentioned under Electric Dynamos. Can only be used on Direct Current—110 or 220 Volts—state which.

For Plating 6 Volts Amp.	Price	For Stripping 12 Volts Amp.	Price
25	\$48.00	12	\$48.00
33	61.00	16	61.00
50	75.00	25	75.00
66	125.00	33	125.00
100	142.00	50	142.00

To operate on 110 or 220 Volts D. C. only.

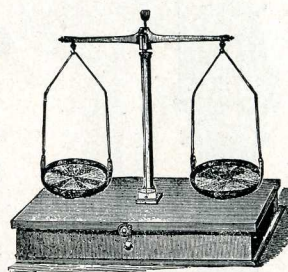


ELECTRIC DYNAMO AND MOTOR COUPLED

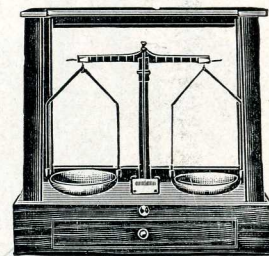
Can be furnished belt driven instead if desired specify volts, cycles and phase for electric current.

For Plating 6 Volts Amp.	Price	For Stripping 12 Volts Amp.	Price
30	\$78.00	15	\$78.00
37	103.00	18	103.00
66	123.00	33	123.00
83	148.00	41	148.00
108	173.00	54	173.00

Motors 110 or 220 Volt D. C. or A. C. 60 Cycles—Single Phase.

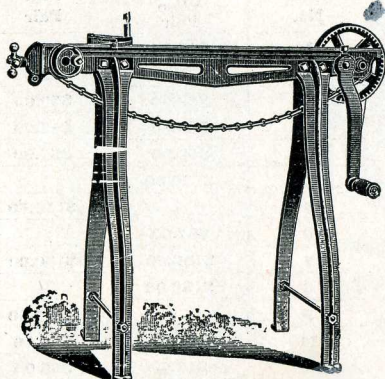


GOLD SCALES WITH WEIGHTS
ON BOX



DIAMOND SCALES WITH
WEIGHTS IN GLASS CABINET

	Gold Scales				Diamond Scales	
	8 oz.	16 oz.	30 oz.	50 oz.	100 oz.	
Size, ins.—on box	6 1/2 x 12 1/4	7 x 13 1/4	8 x 15	9 x 17 1/2	14 x 32	
Size, ins.—in glass	7 1/2 x 15	7 1/2 x 16	8 1/4 x 17 1/2	9 1/2 x 19	16 x 33	
PRICE—on box, including weights	\$18.00	\$22.50	\$30.00	\$38.00	\$78.00	
PRICE—in glass, including weights	\$28.00	\$33.50	\$42.00	\$52.00	\$103.00	
						50k 100k
						6 x 12 1/2 6 x 12 1/2
						\$30.00 \$35.00

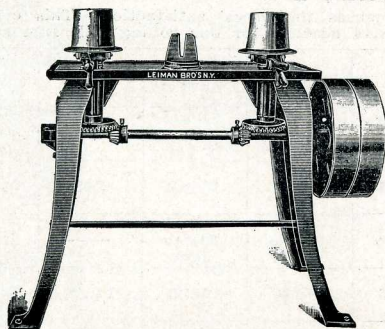


Iron—4 feet long. With tongs for pulling the wire and vise for holding draw plates. Floor space 25x45 in.

PRICE \$35.00

We can furnish this style 8 feet long for power drive—\$175.00.

WIRE DRAWING MACHINES

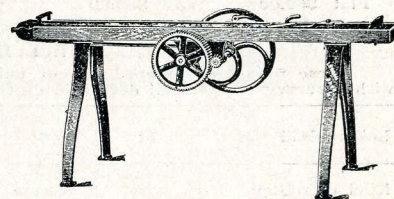


Rotary Draw Bench—For power with geared wire coilers for fine wire drawing. Floor space 30x48 inches.

PRICE \$250.00

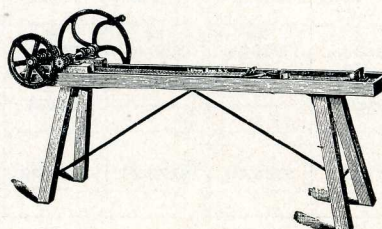
Wood—7 ft. long with 4 inch wide double belt with riveted joints and pair of tongs—iron legs—floor space 26x95 inches.

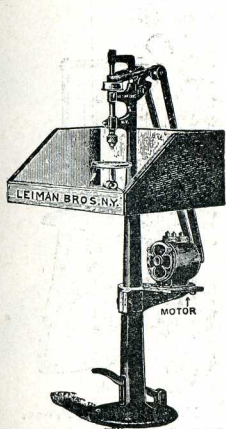
PRICE \$90.00



Wood—7 ft. long with 4 inch wide double belt with riveted joints and pair tongs—wood legs—floor space 26x95 inches.

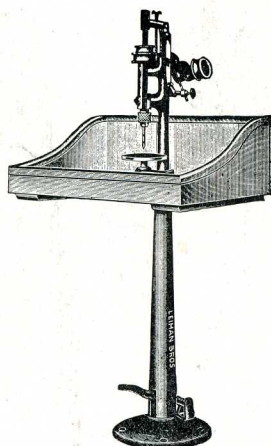
PRICE \$62.00





PRICE

Complete as shown
\$106.00

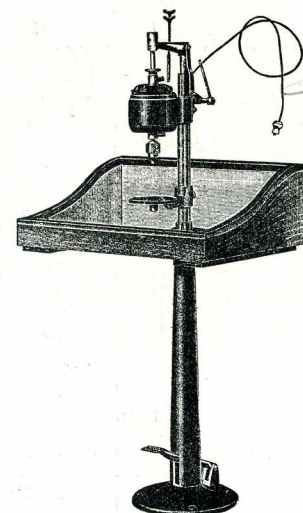


PRICE

Without motor as shown
\$85.00

No. 6 Drill Press—For drilling accurate holes in all materials, celluloid, wood, metals, glass, etc.

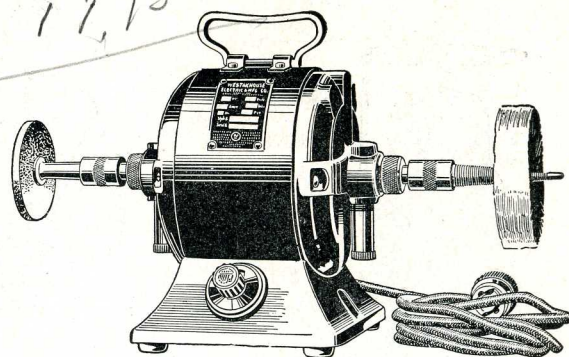
Has hand and foot sensitive feed, belt tightening idler pulleys, adjustable drilling depth stop, adjustable face plate, 2 step cone pulley, adjustable motor table, zinc lined bench 20 x 29 inches, and chuck to hold drills No. 80 to 21/64. Motor 1/4 H. P. specify D. C. 110 or 220 Volts or A. C. 60, 1, 2 or 3 phase.



No. 5 Motor Drill Press—With

hand and foot sensitive feed, adjustable drilling depth stop, adjustable face plate, zinc lined bench 20 x 29 inches and chuck to hold drills No. 80 to 21/64. Motor is rigid, the chuck spindle sliding up and down inside hollow armature shaft. Complete, ready to run—**\$125.00**.

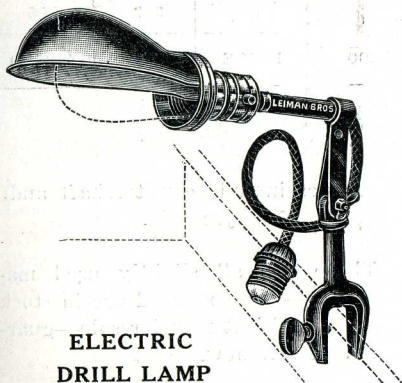
For 110V. A. C. 60 cycles, single phase or direct current—specify which.



Model W Polishing and Grinding Motor—With convenient carrying handle—one taper chuck and one wheel chuck. Speed 1750 R. P. M.

1/6 H. P. 110 Volts D. C. **\$35.00**
110 Volts A. C.

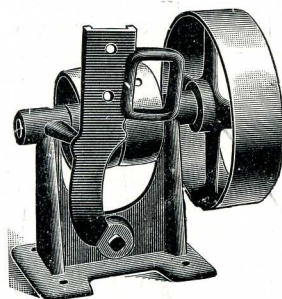
Specify your current.



ELECTRIC DRILL LAMP

Clamps on bench and places light directly on work. Rigidly adjustable. For use with work benches, drill presses, lathes, etc.

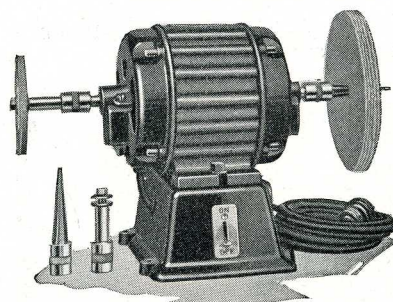
PRICE \$3.00



COUNTERSHAFT

For No. 6 Drill Press
4" & 8" Pulleys.

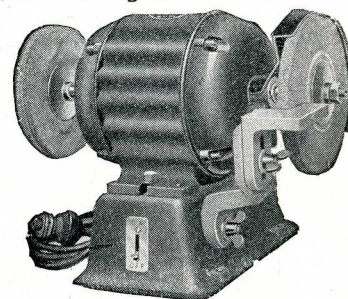
PRICE \$10.00



Model M Electric Polishing Motor.

1/4 H. P. 110 or 220 Volts D. C. or A. C. 60 Cycles one Phase speed 1725 R. P. M.

With 2 taper chucks..... **\$35.00**
Or one wheel and one taper
chuck..... **35.00**



Model M Electric Polishing and grinding Motor.

Or with 2 wheel chucks..... **\$35.00**

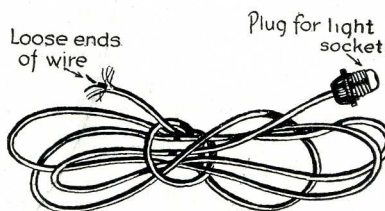
SPECIFY YOUR CURRENT

Leiman Bros. Patented Polishing Dust Collector

LARGE AND SMALL SIZES FOR
STORES, SHOPS AND FACTORIES

Do your work in comfort free from danger-
ous irritating polishing and grinding dust.

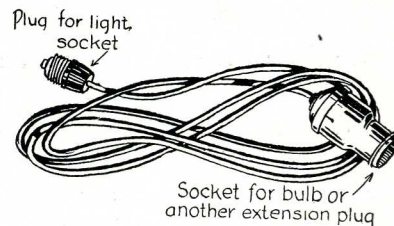
See Page 1.



Electric Appliance Cords—For use with motors, fans, etc., and for extension lights—

Appliance cord with attachment plug to fit sockets and wall outlets.

6 ft. long.
PRICE \$1.25



Extension light cord with attachment plug on one end and lamp socket on other. 6 ft. long.

PRICE \$1.50

PLATING TAKES HOLD QUICKER and Wears Longer on a Sand Blasted Surface

That's why knowing platers who want to increase their reputation for good work use

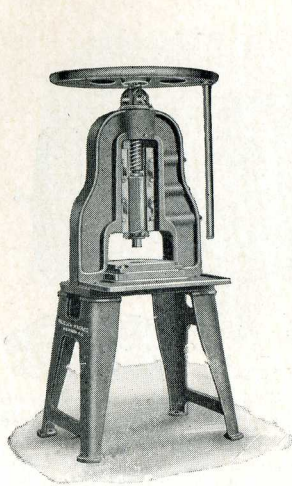
LEIMAN BROS.
PATENTED

SAND BLAST

CONTINUOUS
FEED

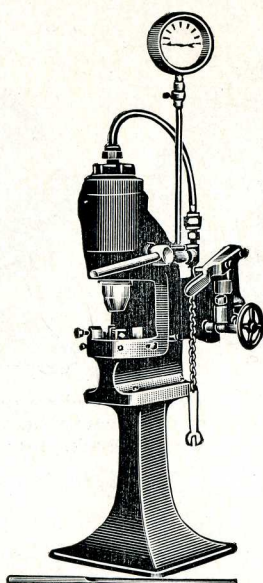
It does away with the use of acid dips for this work. ALSO USED AS A FINISH INSTEAD OF SCRATCH BRUSHING. It's quicker, more uniform, may be varied from very fine to very coarse and, best of all, the most unskilled can apply it at the first try and cannot spoil the work. A GOOD THING TO HAVE WHEREVER GOODS ARE MADE OF METALS, GLASS, RUBBER, CELLULOID, BAKELITE, FIBRE, WOOD OR COMPOSITION.

SEE PAGE 31.



Arch Screw Press.

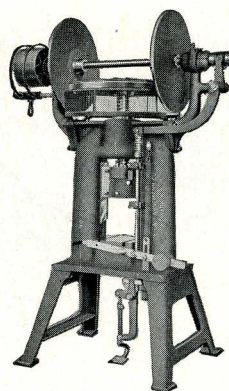
No.	1	2
Kind of Work		
Stroke, ins.	6	8
Floor space, ins.		
Weight, lbs.	1250	1800
PRICE	\$355.00	\$450.00



Hydraulic Press.

Used for ring and medal stamping, die sinking, and similar work. Hand operated, self contained. No outside power required.

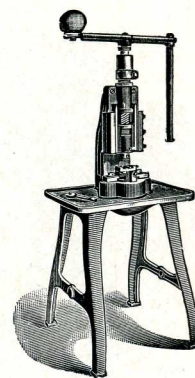
Size Tons	25 ton open jaw	80 ton 4 column
Stroke	1 3/4 ins.	1 in.
PRICE	\$525.00	\$425.00



Percussion Press.

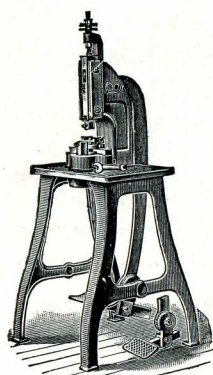
Uniform, regulated pressure for light embossing up to heaviest class of pressed work.

No.	3	5	7	8 1/2
Equivalent to drop hammer weighing	less than 75 lbs.	75 lbs.	200 lbs.	350 lbs.
Pressure exerted, tons	9	25	50	75
H. P. required	1/2	1	2	3 1/2
Weight, lbs.	1000	2500	4000	7500
Kind of work	Optical & small jewelry	Class pins	Medals & Signet rings	Small hot brass parts
PRICE	\$450.00	\$630.00	\$990.00	\$1665.00

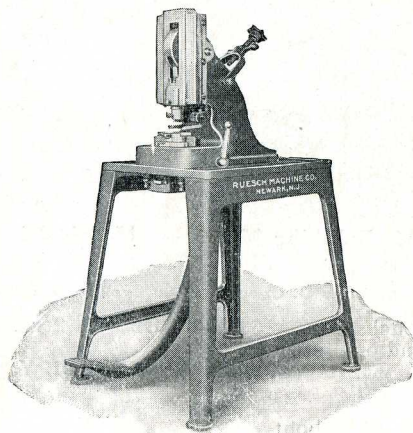


Hand Screw Press.

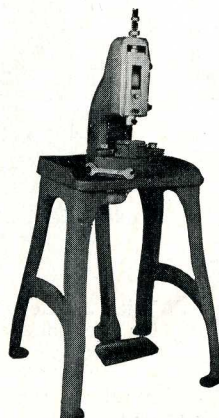
No.	2	3
Kind of Work	Cut pieces size and thickness of a quarter or for light embossing	Cut pieces size and thickness of a half dollar or for light embossing
Stroke, ins.	3	4 1/2
Floor space, ins.	25x31	27x34
Weight, lbs.	500	725
PRICE	\$100.00	\$175.00



No. 1 Foot Press.

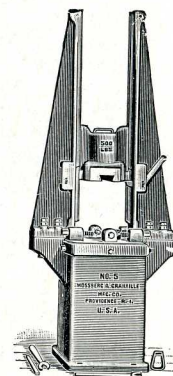


No. 7 Foot Press.



No. 2 Foot Press.

Foot press No.	1	2	7
Kind of work	Cuts pieces size and thickness of a dime	Cuts pieces size and thickness of a quarter	Cuts and stamps flexible bracelet boxes, ring shanks size of half dollar. Precision work.
Stroke, ins.	1 3/4	2 1/4	1 1/8
Floor space, ins.	24x24	26x26	26x38
PRICE	\$50.00	\$75.00	\$275.00



Drop Hammer

Some have square and some round anvils.

Size lbs.	50	75	100	125	150	200	350
Height of arms							
Weight							
PRICE of springboard—Wood—	\$40.	\$40.	\$40.	\$40.	\$40.	\$40.	\$40.

See picture.

LEIMAN BROS.
Patented

SAND BLAST

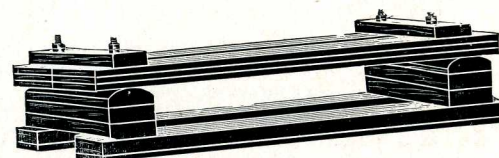
WILL CHEAPEN YOUR PRODUCTION

See
Page
30

Scratch brushing is more expensive!

Acid dips are disagreeable!

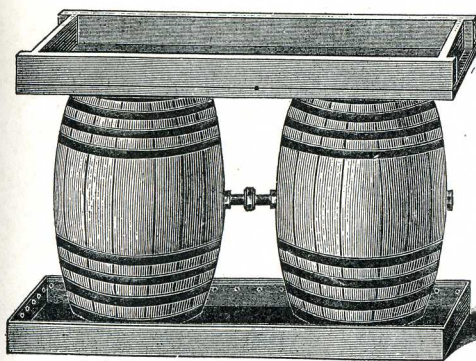
Both are slower than sand blasting and do not approach the latter in uniformity of finish.



Drop Hammer Spring Board

PRICE \$40.00

Floor Space 2x6 feet.



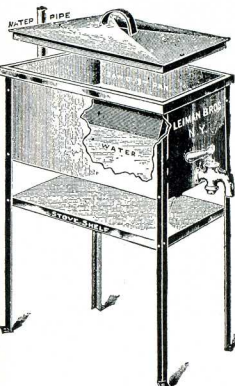
WASH BASINS

for gold saving purposes

One barrel size, 24x30 ins. \$12.00
Two barrel size, 24x62 ins. 18.00

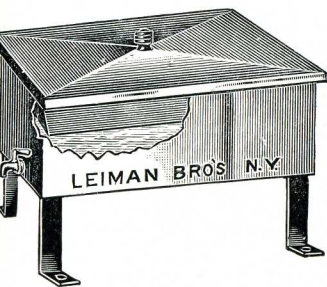
Bottom drip pans to protect the floor
One barrel size, 26x30 in. 5.25
Two barrel size, 26x56 in. 7.90
No piping connections supplied.

Barrels, hardwood, each 7.00



SAWDUST HEATER and DRYER

Made of copper with brass faucet and rear water service connection. Gas stove required for heating.
Floor space 12x19 ins.
Body 12 ins. deep.
Sawdust pan 4 in. deep.
Height over all 41 ins.
Price \$35.00



SMALL SAWDUST HEATER and DRYER

Made of copper with brass faucet.
Size 8 1/2 x 12 1/2" 6" deep.
Sawdust pan 3" deep.
Price \$15.00
Gas stove required for heating.

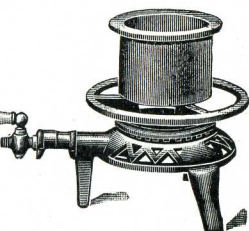
ACID PICKLE POT

Made in one piece sheet lead 1/4 in. thick.
2 Sizes.
6 in. diameter, 5 in. high PRICE \$10.00
8 in. diameter, 5 1/2 in. high PRICE \$12.00



CAST LEAD PICKLE POT

3 in. diameter, 2 1/2 in. deep.
with gas stove for hose or pipe
Price \$4.50

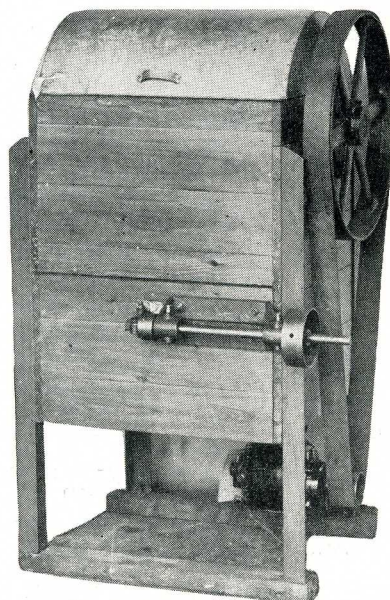


TUBBING MACHINE

The tubbing process is one that makes quite a saving in labor costs. Strictly speaking this process involves burnishing of metal parts, whether it be jewelry, optical goods, hardware, gold pens, collar buttons or what not. It is meant to do the work in quantities automatically where a very high lustre such as is produced by buffing on a machine is not necessary.

The machine is a heavily built wooden tank inside of which is suspended on suitable bearings a hexagon shaped tank which revolves and into which the work is placed together with the proper sized and shaped steel spickets, balls, and soap. The inner tank revolves partly submerged in the water. A dozen, a gross, a thousand or more articles of any shape or size may be placed in this inner tank without danger of denting, bending or otherwise spoiling them.

We are glad to advise on this class of work if desired and can furnish the machine alone with loose and tight pulleys for operating from a main shaft or with electric motor attached complete.
Floor space 23x32 inches.
Height over all 41 inches.
Inner tank 11 1/2 x 12 inches.
Price \$75.00
With motor and all connections between motor and tubbing machine—
Price \$150.00



COMBINED CRUSHER AND SIFTER MACHINE

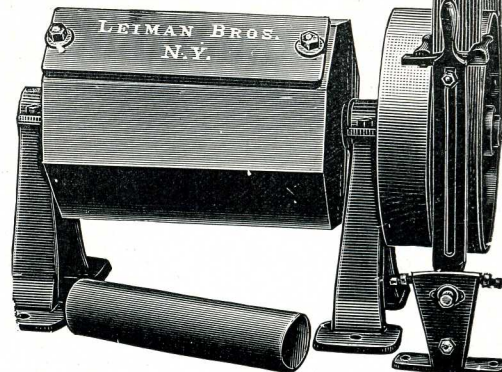
Equipped with 1/4 H. P. back-gear motor. Capacity of crusher 1 peck.
Size of hexagon crusher body 13x18 ins.
With tumbling crusher weights. With alternately operating belt for crusher and sifter.
Floor space 30x34 ins.
Price \$265.00

CRUCIBLE CRUSHER

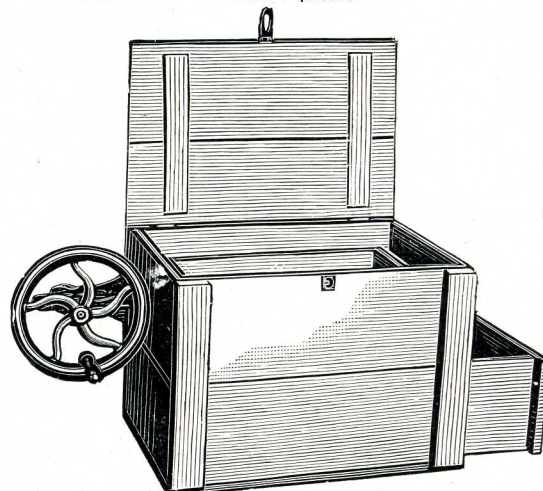
A strongly built machine for crushing crucibles, porcelain or similar matter. Made after the most approved ideas and in use in the leading factories where refining is carried on.

The material is placed in the crushing machine and large cylindrical weight reduces it to a powder, after which it is placed in the sifting machine shown below.

Roller, 44 lbs. Loose and tight pulleys, 18x3 1/2". Shaft, 2-3/16". Body, 14x19". Floor space 23x34". Weight 385 lbs. Shipping weight, about 531 lbs. Boxed weight, 600 lbs.



Shipping size 5 cubic feet. Bearings babbitted. Speed 50 revolutions per minute. Sheet iron pan included. PRICE \$90.00



SIFTING MACHINE

Furnished for hand or power operation. This machine is used in connection with the crusher shown above. The powdered material from the crusher is placed in the upper compartment which contains the double sieve.

The lateral motion of the sieve sifts the powder to the zinc lined drawer below. Particles not sufficiently reduced are returned to the crusher.

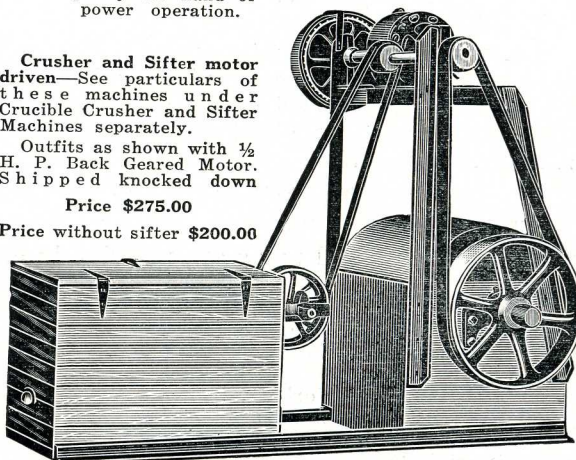
Dust-proof with double body and interlocking seams. Outside dimensions of box, 19x27 1/2 in. Size of sifter tray, 16x18 in. Size of loose and tight pulleys, when ordered for power operation, 10x1 1/2 in. Floor space, 20x39 in. Shipping weight, about 140 lbs. Boxed wgt. 190 lbs. Shipping size, 12 cu. ft. PRICE \$75.00
Specify for hand or power operation.

Crusher and Sifter motor driven—See particulars of these machines under Crucible Crusher and Sifter Machines separately.

Outfits as shown with 1/2 H. P. Back Geared Motor. Shipped knocked down

Price \$275.00

Price without sifter \$200.00



Powerful - Durable

Leiman Bros.—Patented—Rotary Positive

Simple - Noiseless

AIR
PRESSURE

BLOWERS

GAS AND
VACUUM

PUMPS

They Take Up
Their Own
Wear

Ten Sizes—
1 to 338 cu. ft. per hour
1 to 10 lbs. pressure
1 to 28 inches vacuum

What The Machines Do

LEIMAN BROS. PATENTED HIGH PRESSURE BLOWERS and Vacuum Pumps are fast displacing all other makes for the following as well as all other purposes including those with which gas (not injurious to cast iron or steel), oil or coal are used.

MELTING OF METALS
STEAM HEATING
HARDENING
ANNEALING
TEMPERING
FORGING
BRAZING
SOLDERING
CLEANING
AGITATING LIQUIDS
SAND BLASTING
FUEL OIL PLANTS
BOTTLE FILLING
PREHEATING
GAS FURNACES
OIL FURNACES
VACUUM CHUCKS
BLOW PIPES

GAS BOOSTING
LAUNDRIES
PAPER FEEDING
TAILORING SHOPS
CARPET CLEANING
GLASS BLOWING & BENDING
GAS APPLIANCES
REMOVING PAINT
SPRAYING
ATOMIZING
HEATING & VENTILATING
PNEUMATIC SERVICE
TESTING GAS FIXTURES
TRANSFERRING LIQUIDS
BURNING BRANDS
BLOWING DIRT, STAMPINGS OR
CHIPS FROM MACHINE TOOLS

ALSO USED AS AIR MOTORS

There are many purposes for which these blowers are nicely adapted and before deciding any proposition their availability should be investigated. It means money and time saved.

Simple Construction of Leiman Bros. Blower

The Interior view illustrates at a glance how simple this machine is in construction. The entire working parts consist of only the piston and four wings. The wings are attached to the piston by a hinge-like device producing a very easy action, and by the rotating motion of the machine they are kept in constant contact with the inner cylinder wall. Each wing as it reaches the top is kept close to the inner cylinder wall by a pressure stud, thus preventing the air from passing back into the machine, insuring a perfect compression at all times. (Sizes 25 and 26 alone have 2 flat wings instead of the curved wings on account of their small size.)

The advantage gained by this simple construction is, that the wings in constant operation will wear in conformity with the inner cylinder wall and maintain a perfect fit and positive air pressure, even after long continued usage.

On the largest size the wings, being necessarily larger and heavier, are provided with a steel guide on which the wings rest on its outward motion which counterbalances the weight of the wing and produces a smooth, easy action.

No Delicate Parts

There are no delicate parts on these machines to get out of order. All parts are massive in construction

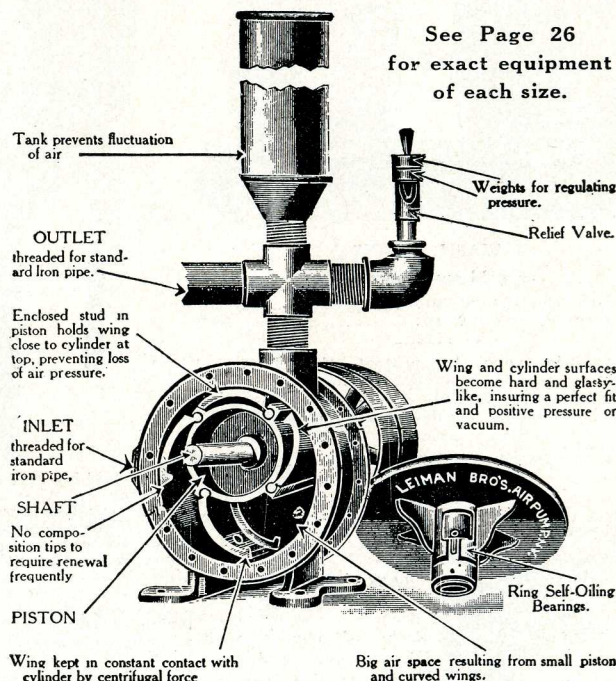
SOME USERS—THOUSANDS MORE EQUALLY WELL KNOWN, TOO

Westinghouse Elec. & Mfg. Co.
Emerson Elec. & Mfg. Co.
Lufkin Rule Co., Saginaw, Mich.
Standard Oil Co., New York.
General Electric Co., Lynn, Mass.
Sprague Electric Works
Western Electric Co.

Board of Education, Newark, N. J.
Winchester Repeating Arms Co.
Remington Arms & Ammunition Co.
Whitehead & Hoag Co.
Bausch & Lomb Optical Co.
Board of Education, New York.
National Lead Co., Brooklyn.

Pittsburgh Plate Glass Co.
Victor Talking Machine Co.
American Lead Pencil Co.
Edison Chem. Works.
Hupp Motor Car Co.
Nairn Linoleum Co.
Ford Motor Co.

See Page 26
for exact equipment
of each size.



PATENTED

and built to stand wear and strain. The operation of the machine depends upon natural forces without the aid of springs, tips on the wings made of foreign material to require constant renewal, etc., while all parts are interchangeable.

Efficiency and Capacity

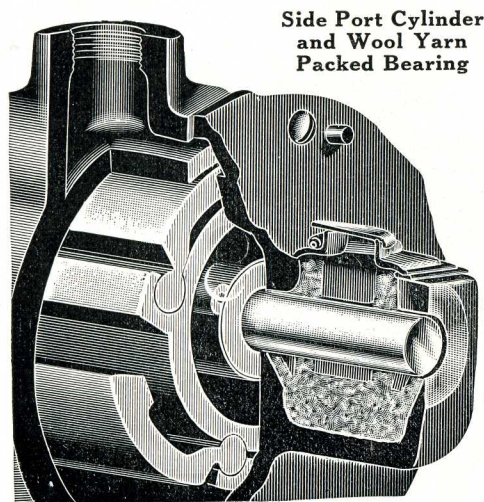
Probably the most important consideration in selecting a blower is the question as to how long it will last, or its ability to maintain its rated pressure and efficiency after long continued use.

The interior construction of LEIMAN BROS. BLOWERS and Vacuum Pumps is so arranged that the wings take up their own wear. They are always in perfect contact with the cylinder however old the machine may be. This results in the highest efficiency, and they are the only blowers that will maintain this efficiency after long continued use. The curved form of the wing, together with the small size of the piston makes the air chamber much larger, and makes the capacity greater than that of any other blower of the same size now on the market.

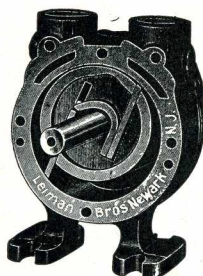
Many concerns are still using the old style machines, which are not alone cumbersome and noisy, but the high speed necessary to get results requires considerable power. They are also a constant source of annoyance and expense. In many cases our small blowers will do all this work most efficiently and the money thus expended is soon made up in the great saving of power, time and trouble.

Side Port Cylinder

Sizes 26 to C are now equipped with our latest improvement, the side port cylinder. The air enters at the inlet and travels through a bypass on the cylinder head entering the cylinder at the side. The same procedure is followed at the outlet. The cylinder is therefore without a direct opening through its curved wall making a free and unbroken surface for the ends of the wings. The result is unprecedented quietness for an air pump, placing these machines in a class by themselves.



Side Port Cylinder
and Wool Yarn
Packed Bearing



The Flat Wing Type
No. 25 and 26 pumps

Low Price of the Blowers

LEIMAN BROS. BLOWERS and Vacuum Pumps while unequalled for efficiency, are lower in price than most of the so-called positive blowers or vacuum pumps now on the market and when considering the important item of repairs these machines are also far cheaper in the long run than any other positive blower or vacuum pump made.

Low Cost of Maintenance

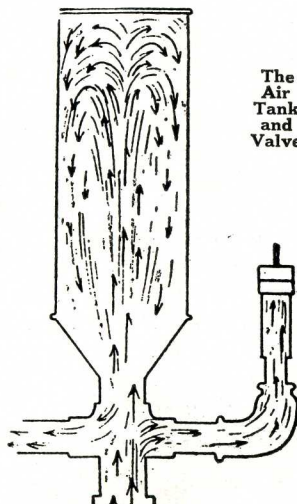
With few working parts and these of strong construction, they do not depend upon springs or cams for their successful operation. There are no delicate parts to break or get out of order and without any tips of foreign material on the wings to require frequent renewal the cost of maintenance is greatly reduced.

Vacuum Air Pressure and Volume

LEIMAN BROS. HIGH PRESSURE BLOWERS and Vacuum Pumps will produce a maximum pressure of ten pounds per square inch. No machine, however, is benefited by constant operation at its maximum capacity and so we advise the use of these machines for steady service at a pressure up to about 4 or 5 pounds per square inch. There is no blower on the market which for power expended will deliver such a large volume of air at such a steady positive pressure. Vacuum may range as high as 20 inches or higher steadily.

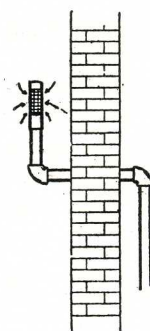
The Air Tank and Valve

All sizes from size C to size H are furnished with an air



The
Air
Tank
and
Valve

reservoir and pressure relief valve. (Omitted when vacuum is desired.) The air is delivered in a steady, positive blast and the reservoir acts only as an additional guarantee of the steadiness of flow of the air while the valve regulates the pressure of the air. By placing one or two weights on the valve or removing them the pressure may be regulated to a nicety and adapted to any use. The valve is also on the size B, but not the tank.



Inlet Pipe and Screen

Inlet Pipe and Screen

An inlet Pipe and Screen are furnished with size D, E, F, G and H Blowers. (Omitted when vacuum is desired.) The screen prevents foreign matter from finding its way into the machine. In all cases, however, it is recommended that the inlet pipe be run out of a window or to any other source of clean air. The inlet is at the side of the machine, the outlet at the top.

Muffler

A muffler is furnished on all pumps up to size C and is used at the inlet when pressure is used or with all sizes on the outlet when vacuum is wanted. It still further quiets the operation of the machines making them still more desirable.



The Wings

The wings of LEIMAN BROS. BLOWERS and Vacuum Pumps are curved, a feature which makes it possible for them to take up their own wear. No matter how old the machine may be or how much wear may take place on the cylinder or on the tips of the wings the fit is always perfect. Each wing is hinged to the piston and may be removed at will. They are interchangeable. (No. 25 and 26 alone have 2 flat wings.)

Ring, Self-Oiling Bearings

The shaft bearings are furnished with a double ring-oiling device in sizes F to H. The oil well is filled with machine oil and the rings on the shaft, as the latter revolves, dip into the oil carrying it up on to the shaft thus insuring a well lubricated bearing and consequent easy operation.

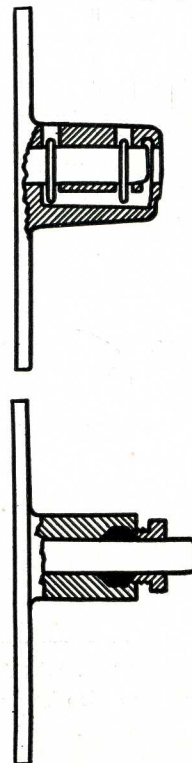
Wool Yarn Bearings

(See Illustration in opposite column)

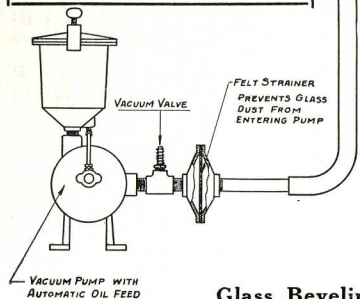
Sizes 25 to E are fitted with our latest type wool yarn packed bearing providing ample lubrication for many months of continuous service. The wool also filters the oil.

Gas Tight Bearings

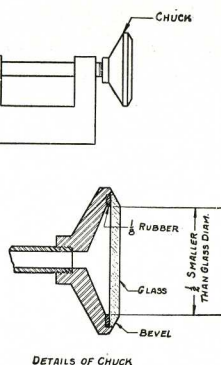
When the machines are used for pumping or boosting gas or even where an extra tight air bearing is required we furnish this type of bearing having an adjustable nut and packing gland on the shaft of the pulley side. The opposite side of the machine then has a closed up or blind bearing. For lubrication a gas tight oil cup or our automatic oiling system should be used.



**QUIET
POWERFUL
& EFFICIENT**



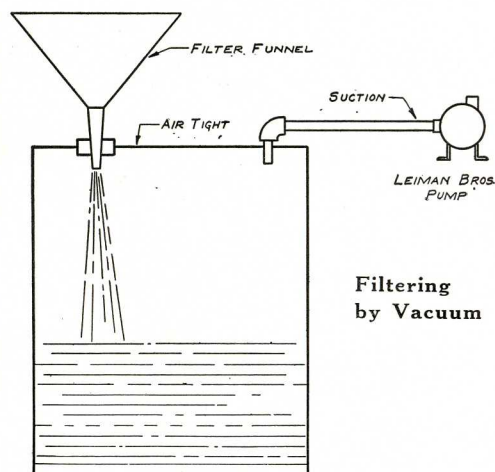
VACUUM PUMP WITH
AUTOMATIC OIL FEED



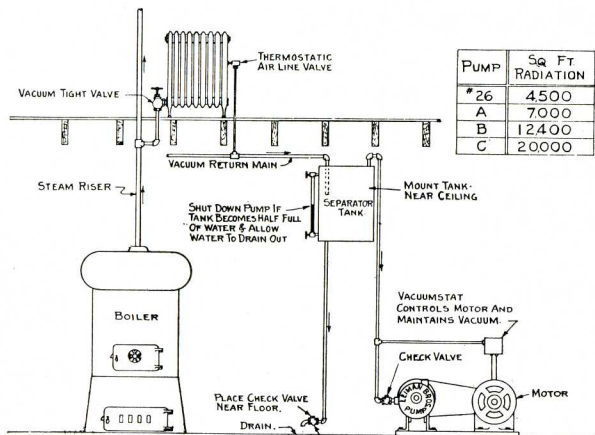
DETAILS OF CHUCK

Glass Beveling with Vacuum Chuck

**Leiman Bros.
Vacuum and Pressure
AIR PUMPS
are built with precision
and
are the only machines
that
TAKE UP THEIR
OWN WEAR**



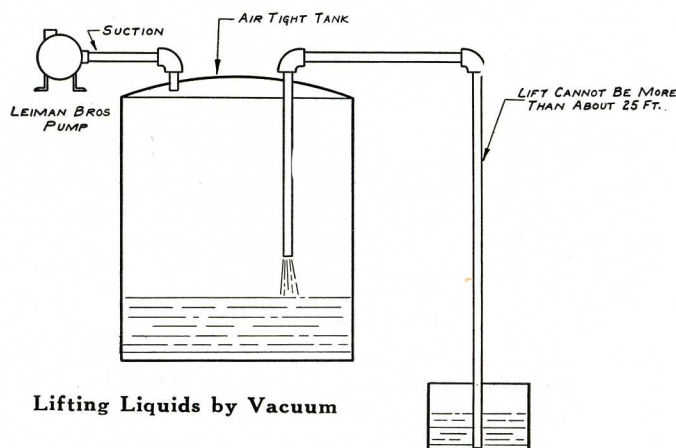
Filtering
by Vacuum



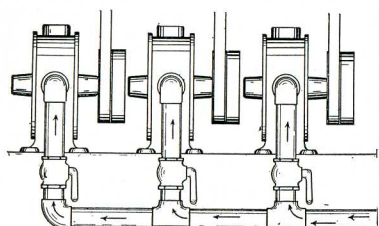
Vacuum in Steam Heating

PUMP	SQ. FT. RADIATION
#26	4500
A	7000
B	12400
C	20000

The pumps
that the
leaders of in-
dustry use
for the par-
ticular jobs.

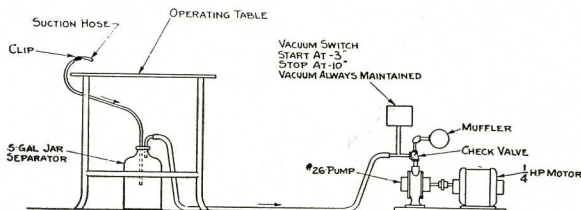


Lifting Liquids by Vacuum

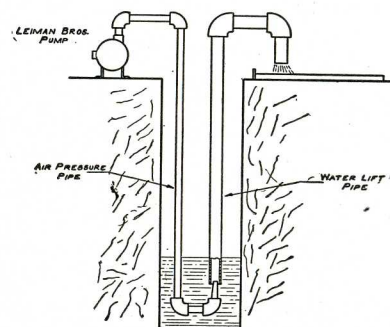


Three Small Pumps on One Line

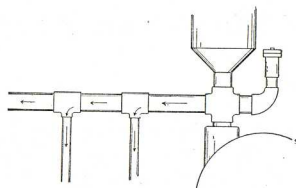
Where a large amount of air is handled it is often more advisable to use two, three, or even a larger number of pumps all connected to a common main. Sometimes unavoidable accidents take place. If this should happen where one pump is in use an entire shutdown results. Not so where the above system is used—should one pump become disabled at least a partial service will continue. If only a portion of the air service is wanted, then one pump can be run, saving power and wear and tear on a single large pump.



HOSPITAL OPERATING TABLE
Using vacuum for wound cleaning

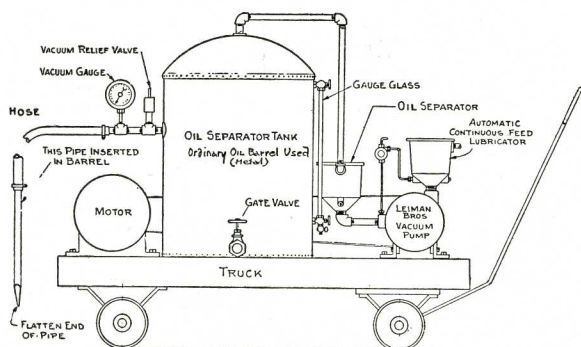


Lifting Liquids by Air Pressure



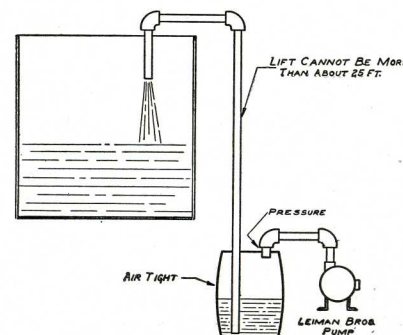
One Pump With Several Outlets

The correct system to employ in using rotary air pumps is to conduct the air through a pipe as large as the opening in the pump will permit and to branch off into smaller branches as near the final outlet as possible. This results in an easy running pump and at the same time saves power. This applies to air pressure or vacuum service.



OIL BARREL CLEANER BY VACUUM

Same system can also be used for wet or dry cleaning.



Lifting Liquids by Air Pressure

Various Adaptations of Air Pump Service

Oiling the Cylinder

The cylinder should be oiled by means of the oil hole at the inlet, but the use of a sight feed oil cup is recommended. When the machine is put into service the oil cup is turned on and when the machine is stopped the oil cup should also be turned off. On size 25 and 26 we use a wick feed oil cup which requires little attention. Some work, however, requires a continuous supply of oil or, as in the case of a high vacuum, an oil seal and then our automatic oil feeding system should be used. (See page 29.)

Big Production Allows Advanced Methods Without Extra Cost

All parts are ground true to size, with the result that the work which these pumps do can in no way be compared to that of other makes.

They are practically alone in many fields of industry in regard to their almost universal employment on important work not possible with other makes of pumps.

Examine Our Evidence Before You Buy

All of these claims are verified by referring to the names of representative users, and by reading the letters of recommendation which we show in this book or by actually trying one of the machines.

A very few minutes' use will suffice to open your eyes as to what a really fine machine of this kind can actually do.

And all of this is offered you not at a premium as regards price, but at the same or even less cost than you might have expected to pay.

You will run no risk whatever in accepting all of these claims at face value and trying one of these machines for whatever work you may have in view.

HERE IS THE EVIDENCE FROM USERS

26 Inch Vacuum Easy.

"It may interest you to know that the writer created and maintained 26 inches vacuum using a 5-gallon tank under far from ideal conditions."

12 Years' Use Without Expense.

"This pump has run 12 years without any upkeep expense except oil, which is a terrible record."

In Water Agitation.

"At this time we wish to pay tribute to the Leiman Bros. Air Pump. We have one in almost continuous operation (24 hours per day) since 1915—3 lbs. air pressure. The air has been used for agitation of water in the low pressure ice making system. This pump has not given one minute's trouble and all we do is give it a few drops of oil in the cylinder weekly and clean out the bearing oil wells once a year. It is as near noiseless as any pump can be and absolutely reliable in every respect."

In Glass Industry.

"We have had in continuous operation for the past six years, one of your small blowers. This blower has given us no trouble whatever. Due to this fact when our production increased and we found it necessary to purchase another blower we immediately mailed you our order, as we can find no blower on the market that will give the service obtained from yours."

For Cone Machines.

"We find the Leiman Bros. Blowers very satisfactory, having used them almost continuously 24 hours per day since they were installed and all are apparently as good as when we first bought them."

In Machinery Manufacturing.

"We have had three of your blowers working on different jobs in our plant for the past five years and have never had one bit of trouble."

Used 350 Without a Complaint.

"We take pleasure in advising you that we are using your air pumps on 350 of our machines, and in no instance has this pump given a moment's trouble, in spite of the fact that in most cases our machines are installed in factories where the employees are not familiar with machinery and in consequence they are not given the proper care."

Steam Heating.

"We are using what is known as an air line system and we are using oil for fuel. The object of using a vacuum pump is to exhaust the air in the radiators and steam lines so that the steaming of the boiler will be prompt and the efficiency of the system enhanced. We are able to run on 8 to 10 pounds vacuum most of the time without difficulty."

Oil Burners.

"Having used your No. 26 pump in all our installations in connection with our oil burners for the past two years, we find them very satisfactory in every respect."

Sand Blasts and Gas Furnaces.

"The results we have obtained from your equipment have been very satisfactory and have solved all of our problems to a nicety for this class of work, i.e., cleanliness in Sand Blasting and continuous Air Volume capable of holding our Hardening Furnace to an exceedingly High Heat."

"We might add that we were rather skeptical of your small and compact blower being capable of solving our problems and for this reason it is all the more gratifying."

"Should you desire to use this letter as a testimonial, you may do so with our heartiest approval and you may also feel at liberty to call on us for any desired recommendations."

Pulleys

Each machine (excepting Nos. 25 and 26 which have a single grooved pulley) is supplied with a pair of loose and tight pulleys by which the machine may be started and stopped while running from a shaft.

Special size pulleys to be used with motor drive are furnished at special prices. (See page 29.)

Weights and Floor Space

LEIMAN BROS. BLOWERS and Vacuum Pumps, occupy but a small floor space and the weight as well as dimensions, etc., will be found in the table in this catalog. These weights are approximate only and serve to give an idea of the machines themselves.

Noiseless in Operation

These machines, on account of the simplicity of construction and their ability to take up their own

(Continued on Page 29)

**PRICES, CAPACITIES, DIMENSIONS, ETC., OF LEIMAN BROS. ROTARY
PRESSURE BLOWERS, VACUUM and GAS PUMPS**
(Approximate Only)

PUMP SIZES	25	26	A	B	C	D	E	F	G	H
Cubic feet per minute at the below mentioned speeds	1/3	1	6	10½	18½	35	58	78½	162	338
Maximum pressure per square inch	10 lbs. Actual Working Pressure—5 lbs or less.									
Maximum Vacuum mercury inches	20 Inches Actual Working Vacuum depends on conditions of use. For Vacuum the oil seal furnished by the automatic oiling system is recommended—see page 29.									
Speed R. P. M.	800	600	600	600	400	300	250	200	200	200
Pulleys inches loose and tight <small>See page 29 for special size pulleys for Motor Drive</small>	2¼ inch Single Grooved Pulley on Sizes 25 & 26		3x1	4x1½	5x1¾	7x2½	12x2½	12x3½	16x3½	20x5
Size inlet outlet—threaded	¼	⅜	½	¾	1	1¼	1½	2	2½	4
Weight lbs. bare pump	3	7	16	21	42	77	134	185	353	650
Weight crated, lbs.	4	9	25	37	61	115	199	263	460	950
Weight Boxed, lbs.	4	9	25	40	80	125	249	326	480	1000
Cubic feet shipping measure	1	1	1	1	1½	2¾	6	9	12	23
Floor space, inches	3x4½	4x7	6x11	8x12	9x14	10x17	13x25	15x29	19x33	19x48
Shaft diameter, ins.	⅜	½	11/16	11/16	13/16	1	1¼	1-5/16	1-9/16	2
Height to center of shaft	1-21/32	2¾	5-7/16	5-13/16	6-21/32	7-1/16	8-5/16	9½	11	11-5/16
Over all length of shaft	4½	6½	11	11½	14	17	25	28 5/16	33	48
Overall height, bare pump	2 15/16	4 13/16	7⅞	8¾	10 7/16	12¼	13 11/16	16½	19⅜	21¼
Overall height, fully equipped pump	2 15/16	4 13/16	7⅞	17	24½	29⅜	35¾	42	51	63½

P R I C E S

Blower fully equipped as indicated	With 1 grooved Pulley Oil Cup and muffler	Same as size No. 25	With 2 Pulleys Oil Cup and Muffler	With 2 Pulleys pressure Relief Valve, Oil Cup and Muffler	With 2 Pulleys pressure Relief Valve, Tank, Oil Cup and Muffler	All these sizes are equipped for pressure blowing with 2 pulleys, pressure relief valve, tank, fittings, inlet pipe and screen and Oil Cup. For pressures up to 5 lbs.				
	\$19.00	\$21.00	\$36.00	\$48.00	\$63.00	\$91.00	\$127.00	\$162.00	\$298.00	\$491.00
Vacuum pump fully equipped as indicated	With 1 grooved Pulley Oil Cup Vacuum Valve and Muffler	Same as size No. 25	All these sizes are equipped for Vacuum with 2 Pulleys, Oil Cup, Vacuum Valve (and Muffler up to size C) for Vacuum up to 6 inches. For more Vacuum add the cost of our double oiling system. (See page 29.)							
	\$22.00	\$24.00	\$39.00	\$51.00	\$64.00	\$92.00	\$127.00	\$162.00	\$298.00	\$491.00
Gas pump fully equipped as indicated	These 2 sizes have 1 grooved pulley and oil cup	All these sizes of gas pumps are equipped with 2 Pulleys, Oil Cup and by pass pressure regulator. (See page 30 for description.)								
	\$23.00	\$25.00	\$83.00	\$89.00	\$103.00	\$135.00	\$195.00	230.00	\$366.00	\$580.00
Blower fully equipped as above, less pulleys			\$18.00	\$20.00	\$35.00	\$47.00	\$61.00	\$89.00	\$123.00	\$157.00
Vacuum pump, fully equipped as above, less pulleys			\$21.00	\$23.00	\$38.00	\$49.00	\$62.00	\$89.00	\$123.00	\$157.00
Gas pump fully equipped as above, less pulleys			\$22.00	\$24.00	\$82.00	\$88.00	\$101.00	\$132.00	\$191.00	\$225.00
Bare pump with oil cup or without for vacuum or pressure			\$17.00	\$19.00	\$34.00	\$45.00	\$58.00	\$86.00	\$120.00	\$153.00
Same for gas			\$22.00	\$24.00	\$39.00	\$50.00	\$63.00	\$91.00	\$125.00	\$158.00
Bare pump with pulleys and oil cup for vacuum or pressure			\$18.00	\$20.00	\$35.00	\$46.00	\$60.00	\$89.00	\$123.00	\$157.00
Same for gas			\$23.00	\$25.00	\$40.00	\$51.00	\$65.00	\$94.00	\$128.00	\$162.00

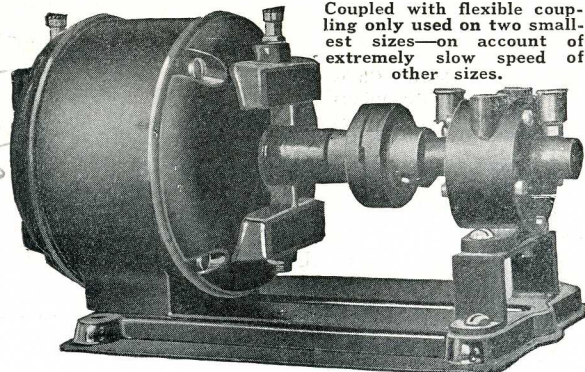
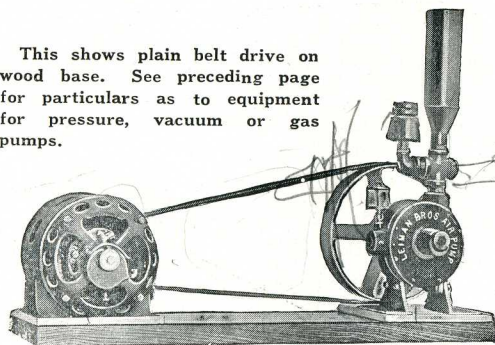
PRICES OF MOTOR DRIVEN AIR & GAS PUMPS on next page

Special Size Driving Pulleys, Page 29

LEIMAN
BROS.

MOTOR DRIVEN AIR, VACUUM & GAS PUMPS

This shows plain belt drive on wood base. See preceding page for particulars as to equipment for pressure, vacuum or gas pumps.



Coupled with flexible coupling only used on two smallest sizes—on account of extremely slow speed of other sizes.

P R I C E S

See preceding page for capacities, etc.

BLOWER

Fully equipped as on preceding page—

For 3 lbs. pressure

H. P. of motor used

BLOWER

Fully equipped as on preceding page—

For 5 lbs. pressure

H. P. of motor used

VACUUM PUMP

Fully equipped as on preceding page—

For 6 inches Vacuum

H. P. of motor used

VACUUM PUMP

Fully equipped as on preceding page—

For 20 inches Vacuum

H. P. of motor used

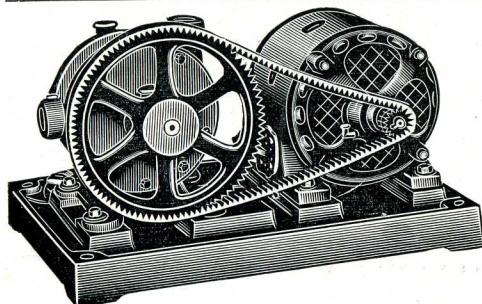
GAS PUMP

Fully equipped as on preceding page—

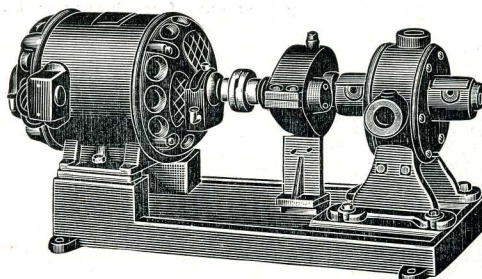
For 5 lbs. pressure

H. P. of motor used

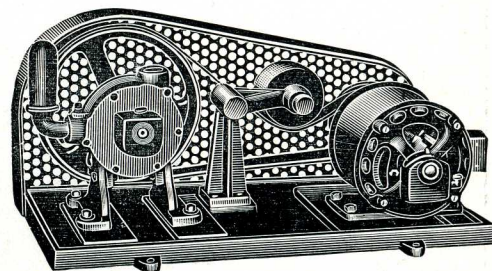
	25	26	A	B	C	D	E	F	G
Plain Belt Drive Wood Base	\$51	53	79	94	121	205	256	306	534
Idler Belt Drive Iron Base	\$75	77	113	126	160	287	333	419	751
Silent Chain Drive Iron Base	\$85	87	120	138	176	293	349	449	727
Silent Gear Drive Iron Base	\$85	87	120	138	176	293	349	449	727
Direct Coupled Drive Iron Base	\$60	62	Coupled Pumps running at 1750—double output shown on Page 26						
	1/6	1/6	1/4	1/3	1/2	1	1 1/2	2	5
Plain Belt Drive Wood Base	\$51	53	90	102	142	216	271	349	600
Idler Belt Drive Iron Base	\$75	77	137	149	229	299	394	487	800
Silent Chain Drive Iron Base	\$85	87	152	164	233	311	419	549	918
Silent Gear Drive Iron Base	\$85	87	152	164	233	311	419	549	918
Direct Coupled Drive Iron Base	\$60	62	Coupled Pumps running at 1750—double output shown on Page 26						
	1/6	1/6	1/2	1/2	1	1 1/2	2	3	7 1/2
Plain Belt Drive Wood Base	\$54	56	78	92	118	201	252	306	535
Idler Belt Drive Iron Base	\$78	80	113	126	157	282	330	414	643
Silent Chain Drive Iron Base	\$88	90	123	141	177	293	349	449	727
Silent Gear Drive Iron Base	\$88	90	123	141	177	293	349	449	727
Direct Coupled Drive Iron Base	\$60	62	Coupled Pumps running at 1750—double output shown on Page 26						
	1/6	1/6	1/4	1/3	1/2	1	1 1/2	2	5
Plain Belt Drive Wood Base	\$74	85	113	148	200	301	392	500	815
Idler Belt Drive Iron Base	\$99	119	146	202	253	407	503	672	1037
Silent Chain Drive Iron Base	\$108	133	165	211	268	488	579	798	1155
Silent Gear Drive Iron Base	\$108	133	165	211	268	488	579	798	1155
Direct Coupled Drive Iron Base	\$81	101	Coupled Pumps running at 1750—double output shown on Page 26						
	1/6	1/3	1/2	3/4	1 1/2	3	5	7 1/2	15
Plain Belt Drive Wood Base	\$60	62	143	149	183	264	342	419	651
Idler Belt Drive Iron Base	\$84	86	180	186	226	345	415	532	769
Silent Chain Drive Iron Base	\$94	96	190	201	246	361	439	567	853
Silent Gear Drive Iron Base	\$94	96	190	201	246	361	439	567	853
Direct Coupled Drive Iron Base	\$72	74	Coupled Pumps running at 1750—double output shown on Page 26						
	1/6	1/6	1/2	1/2	1	1 1/2	2	3	7 1/2



Silent Chain Drive—a belt covering or guard is furnished.



Noiseless gear drive operating in gear case immersed in grease.



Endless belt drive with belt tightening device and having belt covering.

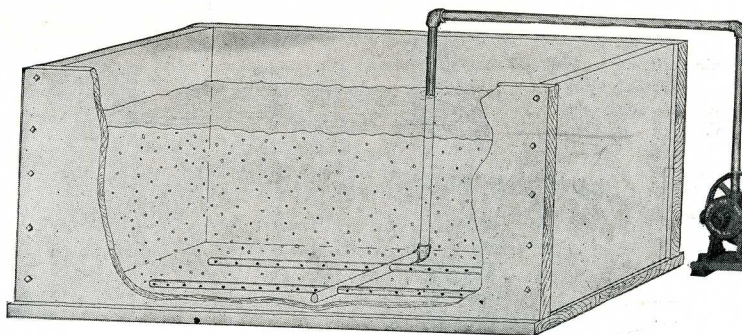
LEIMAN BROS.
ROTARY

Air, Gas and Vacuum Pumps

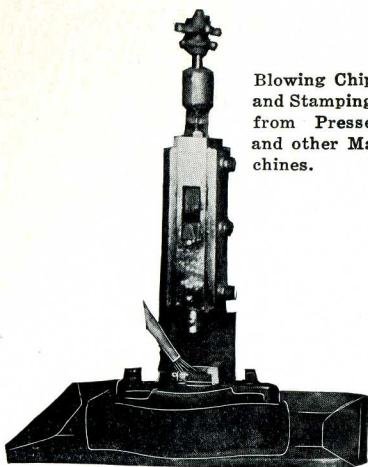
THESE ARE ONLY A FEW USES
SELECTED AT RANDOM

Blowing Chips
and Stampings
from Presses
and other Ma-
chines.

THEY TAKE
UP THEIR
OWN WEAR



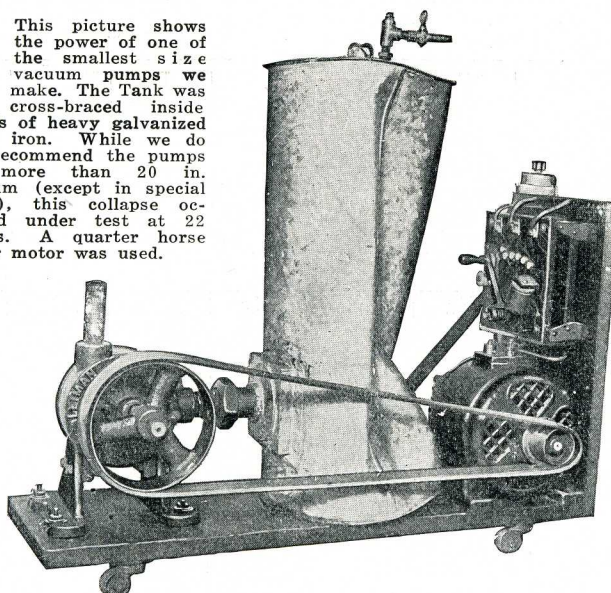
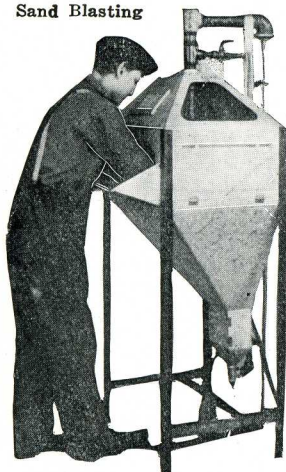
Agitating Electrotype,
Plating and Chemical
Solutions and Water
in Ice Plants.



This picture shows
the power of one of
the smallest size
vacuum pumps we
make. The Tank was
cross-braced inside
and is of heavy galvanized
sheet iron. While we do
not recommend the pumps
for more than 20 in.
vacuum (except in special
cases), this collapse oc-
curred under test at 22
inches. A quarter horse
power motor was used.

Air Blast for Gas
Blow Pipes and
Blow Lamps.

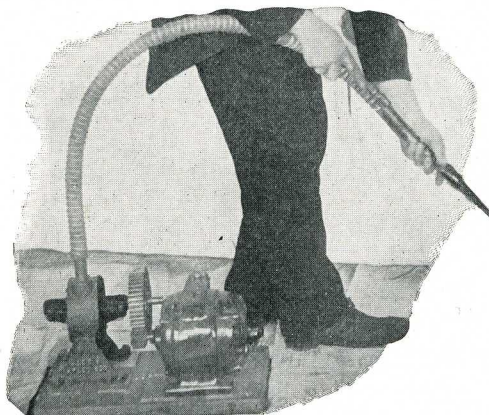
Sand Blasting



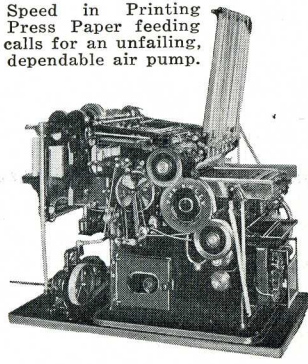
Pumping Gasoline
and other liquids
by vacuum or
pressure process.

Leiman Bros. Patented
**VACUUM &
PRESSURE
AIR PUMPS**

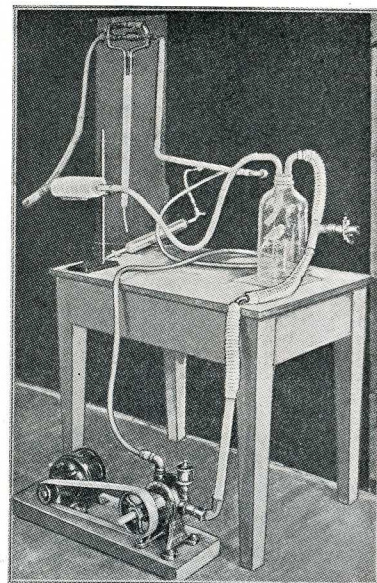
Speed in Printing
Press Paper feeding
calls for an unfailing,
dependable air pump.



Blowing dust out of machinery parts.



We take pride in making
these Pumps just a little
better than we promise—
better than it would seem
necessary.



Laboratory Experiments

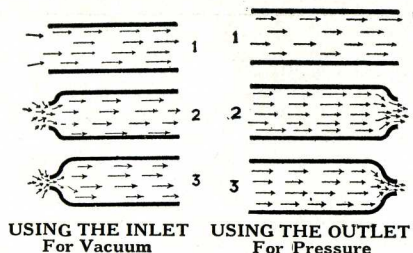
AIR PUMPS USES VARY WIDELY
Consult Us About Your Problem

(Continued from Page 25)

wear, are practically noiseless in operation. They may be placed where noise cannot be tolerated.

Slow Speeds Require Little Power

LEIMAN BROS. BLOWERS and Vacuum Pumps run at slow speeds and, being simply constructed with few working parts, they require very little more power for their operation than is actually required for simply compressing the air. In other words they deliver more air at a higher pressure with a smaller expenditure of power than any other machines known.

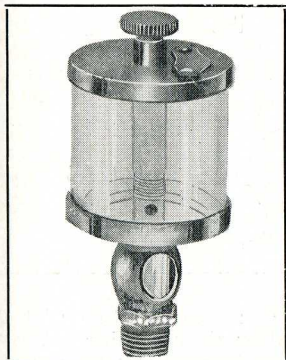


No. 1 in each of the above diagrams shows a volume of air passing freely through a pipe creating neither vacuum in the one case nor pressure in the other.

No. 2 in the first diagram shows the same volume of air being drawn through a reduced opening thus creating vacuum and in the second diagram being forced through a reduced outlet creating pressure.

No. 3 in each case shows the inlet and the outlet still further reduced, thus further increasing the vacuum and the pressure.

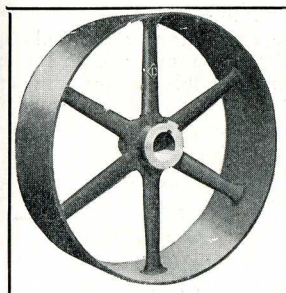
From the above it is seen that the **smaller** the **opening**, the **higher** the **pressure** or **suction** will be. For **steady** operation, however, it is best **not** to drive the machine at its **maximum capacity**, and therefore a **pressure** of 5 lbs. or **suction** of 20 inches should **not** be exceeded **except** in special cases requiring **short runs**. The machines require little more power than would **actually** be required to simply **compress** the air, thus showing that the friction is **very slight** indeed.



LUBRICATING OIL CUP

Used on the cylinder of the pumps. Sizes 25 and 26 have a No. 4 wick feed while the large ones have a sight feed adjustable drip—(2 are required for the size H Cylinder)

No. 25, 26 \$.75 E, F \$2.00
A to D 1.50 G 3.00
H (2 required on this size)
\$6.00 pair



PULLEYS

Special size single pulleys are required for motor and other special drives. Single tight pulleys cost 50c per inch diameter size, minimum \$2.00.

STOCK SIZES

10 inch diameter for Sizes A, B and C pumps.
12 inch diameter for Size C pumps.
14 inch diameter for Size D pumps.
18 inch diameter for Size E pumps.
22 inch diameter for Size F pumps.
Other sizes to order.

ACCESSORIES

For Use With Leiman Bros.

AIR, GAS and VACUUM PUMPS

AUTOMATIC OILING SYSTEM

The single system lubricates the cylinder while the double lubricates both the cylinder and bears. The feed is continuous forming an oil seal insuring a better vacuum. It starts and stops as the machine operates.

SINGLE

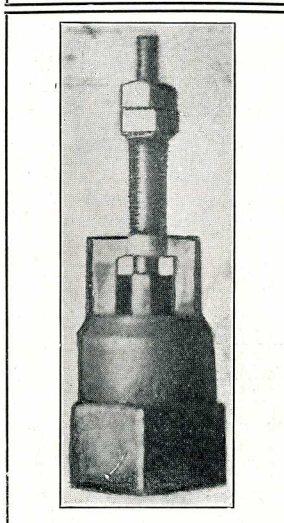
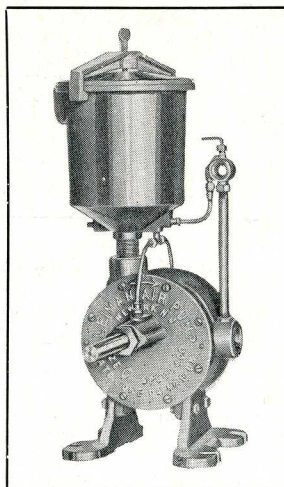
May be used for vacuum up to 6 inches and pressure up to 3 lbs.

No. 25	\$10.00	E	21.00
26	10.00	F	27.00
A, B & C	15.00	G	36.00
D	18.00	H	54.00

DOUBLE

May be used for vacuum above 6 inches and pressure up above 3 lbs.

No. 25	\$15.00	E	28.00
26	15.00	F	36.00
A, B & C	20.00	G	48.00
D	24.00	H	72.00



VACUUM REGULATOR

The vacuum at the inlet is regulated by means of the lock nut adjustment.

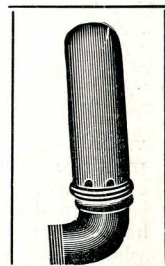
No. 25, 26, A, B, C, D \$3.00
E, F, G & H 3.50

MUFFLER

For use where extreme quietness in a pump is desirable—used on the inlet of pressure blower and on the outlet of vacuum pumps.

No. 25, 26 \$.90
A 1.25
B 1.35
C 1.50

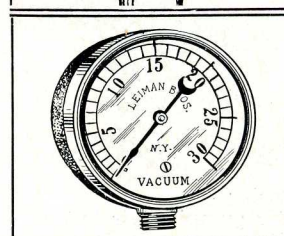
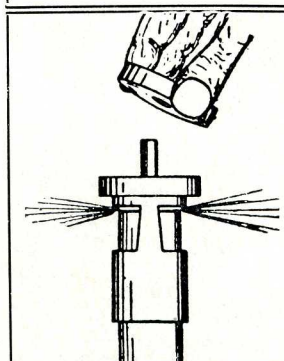
Sizes D to H have an inlet pipe and screen instead.



PRESSURE REGULATOR

The pressure of air at the outlet is regulated according to the amount of weight used.

No. 2, 26, A, B, C \$1.75
D, E, F 2.00
G 6.00
H 8.00



PRESSURE AND VACUUM GAUGES

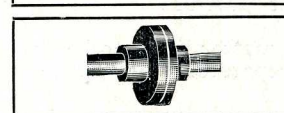
For indicating the degree of pressure of vacuum being maintained by the pumps.

Pressure \$3.00
Vacuum 3.00

FLEXIBLE COUPLING

For use in connecting these pumps direct to motor or other power shafts.

Size 25 \$3.00
Size 26 3.00



LEIMAN
BROS.

WASTE TYPE SEPARATOR

For the Inlet or Outlet of the Air or Gas Pump

**PREVENT
OIL & OILY VAPOR
BLOWING OUT**

**PROTECT THE PUMP FROM MOISTURE,
DIRT AND FOREIGN MATTER**

Just the thing for preventing the spraying of oil or vapor from rotary pumps; to prevent the lubricating oil from creeping along the pipe from the pump to the outlet where clean air is required; to prevent moisture, dust or foreign matter being drawn into rotary pumps by the suction.

Protects the Work and Protects the Pump

This separator contains a quantity of cotton waste through which all the air must pass. The absorbent qualities of the waste allow it to absorb and retain all the foreign matter which has been carried along with the air, thus allowing the air to leave the separator in a clean state. The clamped on cover can be quickly removed and the waste changed when it becomes saturated.

When placed on the outlet of the pump it will absorb the oil which is carried with the air from the pump thus preventing the oil from creeping along the pipe line and blowing on to the work where the air is being used.

When placed on the inlet of the pump it will collect all foreign matter carried in by the air and allow only clean air to enter the pump thus preventing undue wear on the pump parts and prolonging its life. It is excellent on bottle filling machines for absorbing

Gas Booster (Also used for Air)

The gas pump is equipped with by-pass, diaphragm valve and gas tight oil cups. The valve keeps the gas pressure constant no matter how much or little gas is consumed. It is very suitable for cases where gas is pumped out of natural gas wells and used for household or industrial purposes or where gas is used for glass blowing burners, etc.

This gas booster will handle air or any kind of gas (illuminating gas, acetylene, hydrogen, oxygen, etc.), except a gas which will corrode the iron or steel.

The gas pump has solid bearings equipped with a stuffing box which can be tightened up at will.

The gas flows to the points where it is consumed and the surplus gas not consumed flows through the by-pass and back to the pump inlet. The pressure regulating valve automatically keeps the gas constant at any predetermined pressure up to 5 lbs. It is regulated by the position of the weight on the lever.

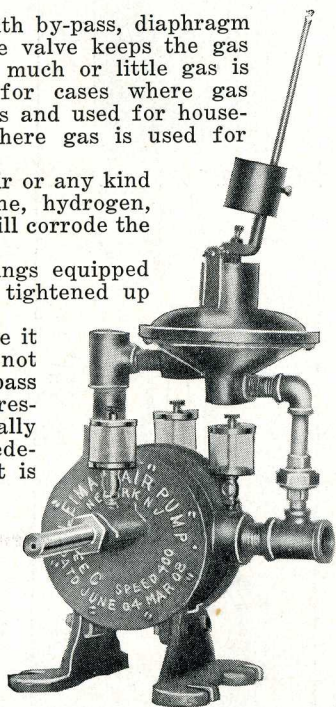
The gas pressure acting on a diaphragm having a large area makes this valve sensitive to a change of a few ounces in the gas pressure.

The bearings are equipped with gas tight oil cups as also is the pump inlet in order to lubricate the working parts of the pump interior.

The gas booster can also be used for pumping air instead of gas if desired in a case where the air pressure must be kept extremely constant and steady.

Where there is moisture or foreign matter likely to be drawn into the pump use our newly devised separator described above. It prevents wear and damage to the pump.

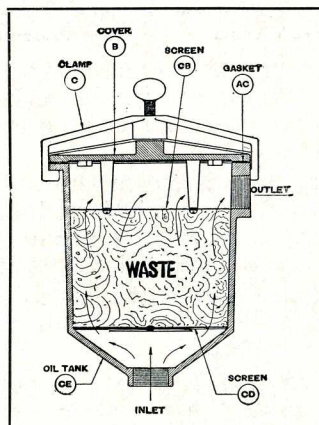
Capacities from 6 cu. ft. per minute up (see pages 26 & 27).



Moisture, Oil and Dust SEPARATOR

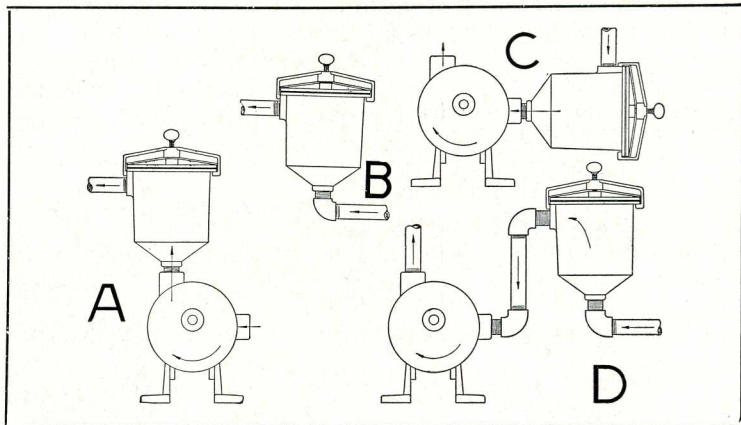
for use with
**ROTARY AIR
or GAS PUMPS
both PRESSURE
and VACUUM**

**Most Efficient
Satisfactory
and Simple**



Used in connection with sand blasts, paper feeding devices, suction chucks, bottle fillers, gas pumping and other devices where foreign material is present—or where the work must be protected from oil and vapor.

Interior view of the separator showing the cotton waste and how the air must travel through it to be relieved of oil, moisture or foreign matter.



Drawing A and B above show—first: attached to outlet of pressure blower and—second: connected on the pipe line between the blower and the air outlet of the line preventing lubricating oil and vapor from following along the pipe.

Drawing C and D above show the separator connected for Vacuum preventing dust, moisture and foreign matter from reaching the pump—a great deal of wear and possible damage to the pump is thus prevented.

Inlet and Outlet has standard pipe threads.

Size 25 & 26	\$ 7.00
Size A & B	10.00
Size C	10.00
Size D	12.00
Sizes E, F & G	15.00

LEIMAN BROS.—PATENTED—CONTINUOUS FEED

SAND BLAST

SAND BLAST OUTFITS COMPLETE WITH AIR SUPPLY

<p>CLEANING CASTINGS</p>	<p>LETTERING AND DESIGN ON GLASSWARE</p>	<p>CLEANING RUST AND CORROSION</p>	<p>DUSTLESS CABINET SANDBLAST</p>	<p>FROSTING GAS AND ELECTRIC FIXTURES</p>
<p>CLEANING SCALE FROM TOOLS</p>	<p>FASTER CHEAPER BETTER THAN THE SCRATCH BRUSH</p>		<p>SAFER CLEANER SURER THAN THE ACID DIP</p>	<p>CLEANING Moulds</p>

Other applications shown: FROSTING WINDOWS AND BLACKBOARDS, MUSICAL INSTRUMENTS, MAT FINISHING JEWELRY AND METAL GOODS, HOSE SANDBLAST FOR BIG WORK.

Most inexperienced get best results on first try. Can't spoil work.

Fine, coarse or medium finishes changed at will.

Paint, enamel, plating clings better to a roughened sand blast surface—save current in plating.

Uniform even effect—not streaky, spotty like dangerous acids. Quicker, cheaper, better than scratch brushing.

Sand blasting may be used as a finish or the base of a finish.

Acid Dips and Scratch Brush Displaced!

Sand Blasting a Clean, Dry Process

Sand blasting is a process used for producing a mat, frosted or satin finish on all sorts of materials, principally brass, copper, aluminum, and similar metals, and also on hard rubber, fibre, celluloid, tortoise shell and compositions of various kinds.

Naturally, this takes in a wide variety of articles of manufacture, whether they be of machinery, articles of hardware, fittings of various kinds, articles of construction or adornment of buildings, jewelry, silverware, works of art or what not.

No line of manufacture is exempt from the possibility of improvement in the method of manufacture, in the finish, or the possible suggestion of new ideas once the sand blasting effects are seen.

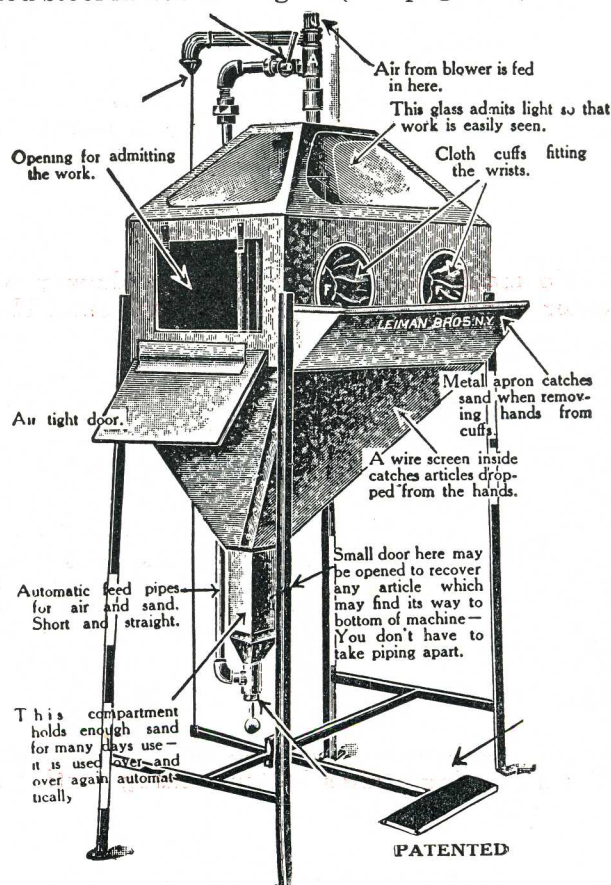
Better Finishes Mean More Sales

An improvement in the appearance of the completed products means an increase of profit through more sales, resulting from better and more pleasing goods.

Any degree of finish may be procured, either very fine, medium or coarse as the case may demand, by simply using a corresponding grade of sand, flint, crushed steel or other abrasive.

Sharp white sea sand is the cheapest, most easily procured, and therefore the most widely used abrasive.

A pailful will last for many days of continuous work. We are prepared to furnish sea sand, the various grades of granulated or powdered flint, or crushed steel in 100 lb. bags. (See page 38.)



Cleaning Castings and Moulds

In addition to mat finishing, sand blasting is used for cleaning moulding or casting sand from castings or patterns and other moulds, removing scale from articles which have been hardened, and removing rust and corrosion.

This results in easy machining and better finishes.



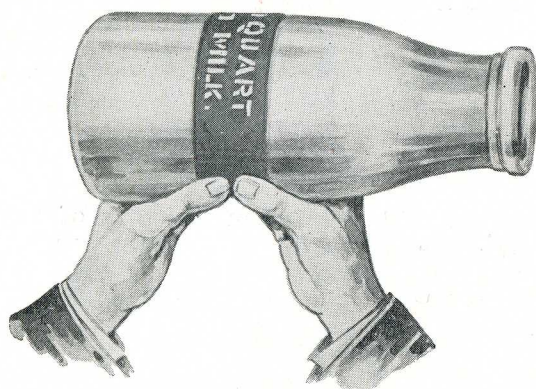
A tissue paper stencil coated with a suitable resisting compound transferred from an engraved die is used for one impression only. But successive tissue paper coated stencils may be taken from the master die without number.



An ordinary mailing machine nameplate may be used for a few impressions to be stenciled.



A stencil like this is made of cardboard, oil board or metal. It will last quite a long period.



LETTERS OR PICTORIAL DESIGNS

are placed on bottles, goblets or flat glass plates by means of stencils, which are held tightly against the glass and brought under the blast of sand at the nozzle.

No machine in your plant can show profits greater in proportion to costs than the sand blast.



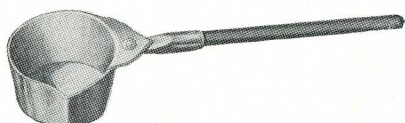
Flat metal remains flat under light sand blasting.



THIN FLAT METAL

curls up like the picture unless a low pressure sand blast like ours is used. High air pressure often does this, so try your samples in our machine and see the difference.

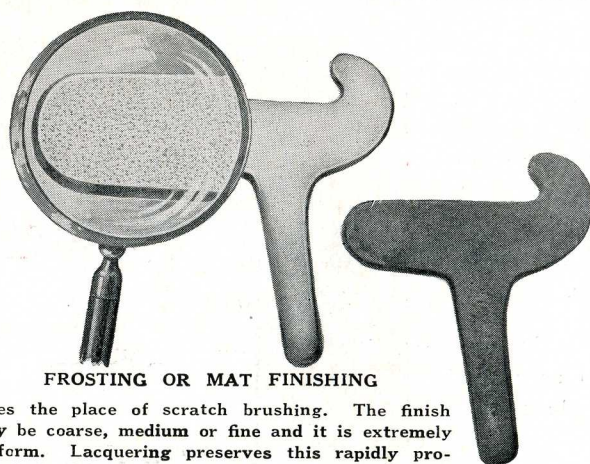
Sand blasting makes better looking castings.



LABORATORY UTENSILS

may be sand blasted and rid of rust or corrosion—laboratory bottles with stopper uniformly numbered with the sand blast insures safety where chemical stoppers must be returned to the proper bottle.

A boy or girl without previous experience gets the finest effects at the first try.

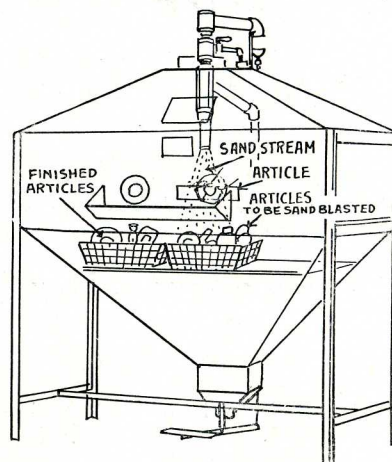


FROSTING OR MAT FINISHING

takes the place of scratch brushing. The finish may be coarse, medium or fine and it is extremely uniform. Lacquering preserves this rapidly produced finish. No acids necessary for frosting.

A little sand, a little air, a little time, but big results, big savings, and big profits.

LARGE CABINETS FOR PRODUCTION WORK



The reason for the large Cabinets is not that the small Cabinets will not answer the purpose. The fact is they do. But they're slow. Everything is in proportion.

The large Cabinets are faster, hence should be selected for small work in quantities equally as well as for large work.

Small work placed in a basket or tray under the nozzle of the Cabinet receives the impact and spray of the sand as each preceding article is being actually held in the hand under the sand stream.

This being true the next piece lifted up by hand is partially finished and usually only needs touching up with the sand blast stream to be thoroughly finished.

So you see a great saving results. The large Cabinets allow a large supply of articles to be placed inside and the larger spray and heavier blast accomplish the faster results.

Acid dips for frosting and mat finishing are often dangerous and unreliable. Sand blasting is safe, dry, uniform and altogether reliable, cheap and profitable.

Stencils on Glass

Glass may be frosted, plain, in designs or any form of lettering—this applies also to other materials like stone, hard rubber, celluloid, fibre, bakelite, etc.

Stencils for this work are easily made by stencil makers—most rubber stamp manufacturers are engaged in stencil cutting work and will readily produce any sort of a plain or fancy stencil required.

They may be made of steel, brass, oiled card board, or any other material.

This process lends itself readily to the marking and decorating of glasses, goblets, bottles, electric light bulbs, mirrors, signs, window glass, etc.

Finishes Without Streaks or Variations

In using the sand blast, the same degree of finish may be procured uniformly at all times and from day to day.

This is impossible with other methods, including acid dips and scratch brushing, both of which require expert labor to secure results.

With the sand blasting process, the work cannot be spoiled or overdone because after the finish is procured nothing is to be gained by prolonging the process and no danger of spoiling the work except where the material is of such a nature as to buckle under the pressure of air.

Blackboards in colleges and schools are readily resurfaced and renovated by sand blasting.

Laboratory utensils are cleaned of rust and corrosion.

Quick, Durable Plating

Quicker, better and more enduring electro-plate results when a sand blasted surface is used because it gives the plate a foothold to which it can cling, hold onto and endure.

This surface preparation also applies to articles of every kind which are to be painted, sprayed, enameled, japanned, galvanized or rust-proofed.

Eliminates Acids and Scratch Brush

Sand blasting supersedes the scratch brush because the work is quicker, more uniform and more lasting.

It also does away with the use of dangerous acid dips making the work more agreeable and pleasant to the operator and insuring a surface free of streaks and blemishes.

Success at the First Try

It shows an additional saving because of the possibility of using unskilled labor while still insuring only the best results.

No experience or skill is required and the work cannot readily be spoiled—both important considerations.

It is, in short, a clean, dry process, improving the appearance or increasing the lasting qualities of other finishes.

Pleasant, safe and altogether a desirable process for practically all classes of manufactured articles no matter what their materials.

What the Sand Blast Does!

Produces a mat or satin finish on metals—frosts glass, cleans moulding sand from castings of brass, aluminum, etc.—prepares the surface of articles to be plated so that the plate takes hold quicker and lasts longer. Articles of all metals, celluloid, wood, glass, rubber and other materials may be sand blasted, including:

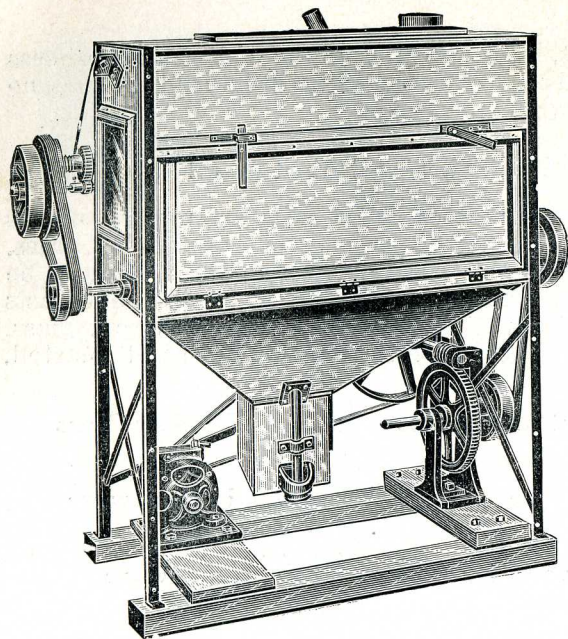
Gas and Electric Fixtures	Frosting Window Glass
Telephones	Statuary
Carburetors	Automobile Hardware
Jewelry	Skates
Cosmetic box and jar covers	Building Hardware
Moulds	Die Castings
Phonographs	Silverware
Combs and Hair Ornaments	Electrical Goods
Clocks and Watches	Radio Parts
Speedometers	Medals
Thermometers	Musical Instruments
Drills and Cutters	Scientific Instruments
Gears	Cutlery
Electric Bulbs	Novelties
Lettering Bottles	

Sand Blasting does not remove Burrs, File or Grinding marks; nor does it take the place of Grinding or Filing. IT DOES NOT POLISH.

Plating Takes Hold Quicker and Lasts Longer on a Sand Blast Surface

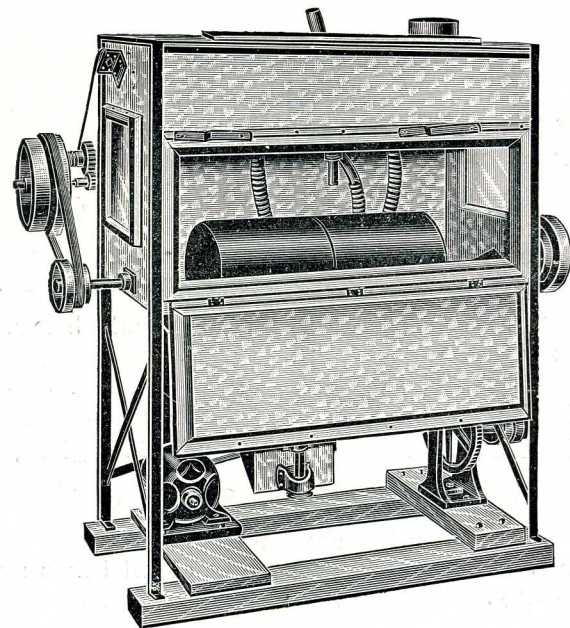
used on

Silverware	Gas Fixtures
Caskets	Glassware
Elevators	Cameras
Buttons	Combs
Machinery	Electric Bulbs
Articles of	Medals
Metal	Dies and Tools
Glass	Jewelry
Fibre	Skates
Rubber	Gears
Wood	Bag Frames
Celluloid, etc.	Firearms
Aluminum Jars	Suspenders
Hardware	Telephone
Name Plates	Electrical Goods
Brushes	



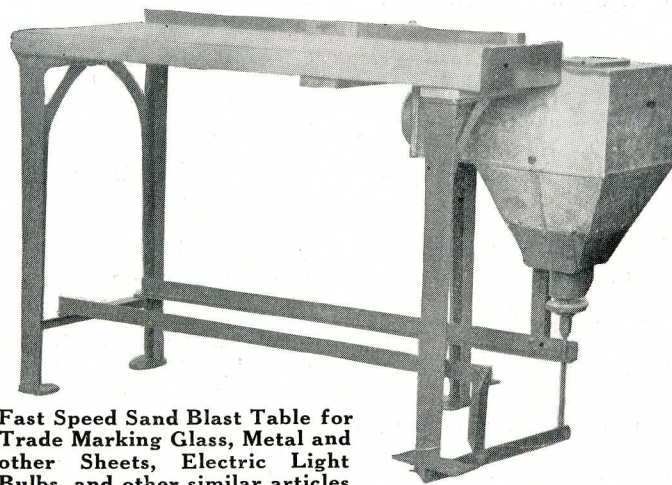
ROTARY DRUM CABINET SAND BLASTS

for
Metal Sheets
etc.



Leiman Bros. Cabinet SAND BLASTS

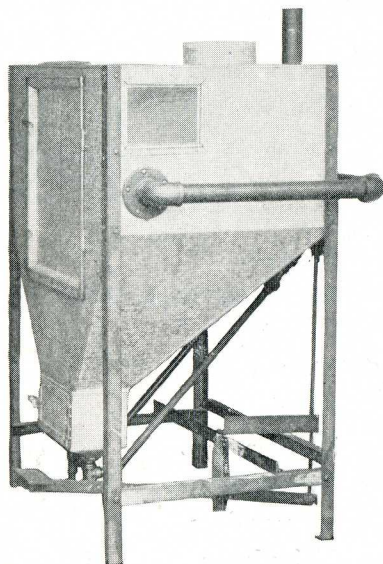
Continuous Feed for
All Sorts of Cleaning
and finishing.



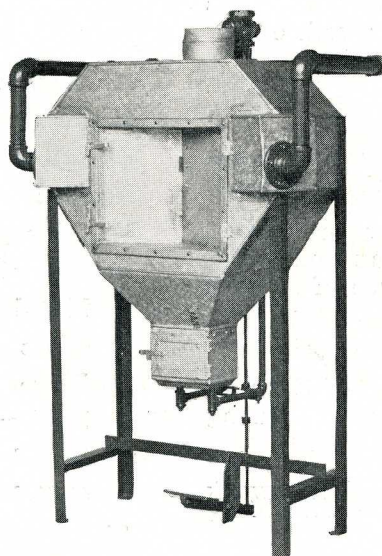
Fast Speed Sand Blast Table for
Trade Marking Glass, Metal and
other Sheets, Electric Light
Bulbs, and other similar articles
with stencils.

Special Designs Made to Order

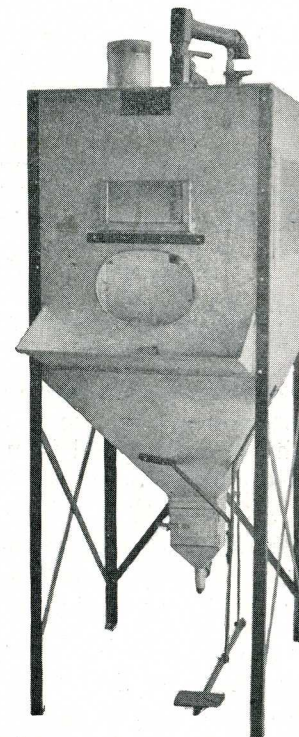
to fit
Special Conditions



Double Nozzle Machine with in-
sertion slot for articles in front.



Double Nozzle Machine with in-
sertion slot in front for sand blast-
ing 2 sides at once.



Cabinet Sand Blast with
single large opening for bot-
tles, vases, stationery, etc.

Selected at Random INDUSTRIAL LEADERS

Some of the Users

of Leiman Bros.
SAND BLASTS!

Otis Elevators
Weston Electrical Instruments
Penn. R. R.
Westinghouse
Dura Mechanical Hardware
Chandler Nameplates
Edlund Brooms
Reading Hardware
De Vilbiss Sprays
Ford Instruments
General Railway Signals
Herschede Hall Clocks
Markel Lighting Fittings
Bristol Instruments
Reliance Metal Stampings
Caldwell Lighting Fixtures
Corning Glass
Veeder Counters
General Plating Co.
Quality Metal Finishing Co.
Kelsey Wheels
Peck, Stow & Wilcox
De Laverne Machine Co.
Eastman Kodaks
Jennings Bronzes
Couterier Band Instruments
Imperial Band Instruments
Angus & Coote, Ltd., Jewelry—
Sydney, Australia
Waldes & Co. Jewelry—
Prague, Bohemia
Wilt Twist Drill Co.—
Walkerville, Canada
Artistic Bronze Co.—Bridgeport
Connecticut Web & Buckle Co.—
Bridgeport
Remington Arms & Ammunition Co.—
Bridgeport
Van Siklen Co., Automobile Speed
Meters—Aurora, Ills.
Cox Multi-Mailer Co., Mailing
Machines—Chicago
Hausmann & Sons, Ltd., Jewelry—
New Orleans

Standard Thermometer Co.—Boston
Cadillac Motor Car Co.—Detroit
Monarch Mfg. Co.—Detroit
Gutfreund-Arnold Jewelry Co.—
St. Louis
Westinghouse Lamp Co., Electric
Lamps—E. Orange, N. J.
Edison Phonograph Works—
Orange, N. J.
Diehl Mfg. Co., Electric Motors—
Elizabeth, N. J.
Edison Lamp Works, Electric Lamps—
Harrison, N. J.
General Electric Co., Electrical
Goods—Schenectady, N. Y.
Carter, Howe & Co., Jewelry—
Newark, N. J.
Ingersoll-Rand Co., Machinery—
Phillipsburg, N. J.
A. Schrader's Son, Inc., Brass Goods—
Brooklyn, N. Y.
General Optical Co., Jewelry—
N. Y. City
Sier-Bath Co., Automobile Goods—
N. Y. City
Taylor Instruments Co., Thermometers
—Rochester, N. Y.
Savage Arms Co.—Utica, N. Y.
Sumter Electrical Co., Magnetos—
Sumter, S. C.
Splitdorf Electrical Co., Magnetos—
Newark, N. J.
Koscherak Bros., Bottles and Syphons
New York City
Wm. Sheer, Manufacturing Jeweler—
New York City
Polachek & Bro. Co., Gas and Elec.
Fixtures—Milwaukee, Wis.
A. H. DeBache & Co., Bottles and
Syphons—Havana, Cuba
Univ. of Wisconsin, School of Mines
and Metallurgy—Madison, Wis.

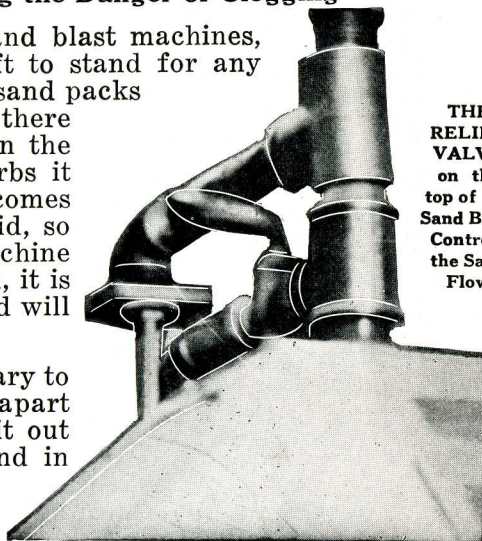
Los Angeles Gas & Elec. Fix. Co.,
Gas and Elec. Fixtures—
Los Angeles, Cal.
Hart & Hegeman Mfg. Co., Electrical
Goods—Hartford, Conn.
Seoville Mfg. Co., Brass Goods—
Waterbury, Conn.
Thos. Day & Co., Gas and Electric
Fixtures—San Francisco, Cal.
Wahle, Phillips Co., Gas and Electric
Fixtures—New York City
New York & New Jersey Chandelier
Co.—Jersey City, N. J.
Meyberg Company, Gas and Electric
Fixtures—Los Angeles, Cal.
A. Lietz & Co., Scientific Instruments
—San Francisco, Cal.
Ontario Lamp & Lantern Co.—
Hamilton, Canada
Northern Electric & Mfg. Co.—
Montreal, Canada
Western Electric Co., Electrical Goods
—Chicago, Ill.
Victor Talking Machine Co.—
Camden, N. J.
Eisenstadt Mfg. Co., Jewelry—
St. Louis, Mo.
Imperial Mint—Japan
Whitehead & Hoag Co., Advertising
Novelties—Newark, N. J.
Clark & Coombs Co., Jewelry—
Providence, R. I.
Stafford Ring Co., Jewelry—
Providence, R. I.
Jennings Bros. Mfg. Co., Bronzes—
Bridgeport, Conn.
New England Watch Co.—
Waterbury, Conn.
New Haven Clock Co.—
New Haven, Conn.
Seth Thomas Clock Co.—
Thomaston, Conn.
Automatic Electric Co., Electrical
Goods—Chicago, Ill.

Le Bolt & Co., Jewelers—Chicago, Ill.
U. S. Government—Washington, D. C.
Columbia University—New York
Schwaab Stamp & Seal Co., Stamps
and Seals—Milwaukee, Wis.
Hardware Supply Co., Hardware—
Grand Rapids, Mich.
Champion Brass Works, Gas and
Elec. Fixtures—Coldwater, Mich.
Keeler Brass Co., Brass Goods—
Grand Rapids, Mich.
Breeze Carburetor Co., Automobile
Goods—Newark, N. J.
Wilkinson & Co., Clocks and Bronzes—
Brooklyn, N. Y.
Tiffany Studios, Art Glass, Bronzes—
Corona, L. I.
Mark Cross Co., Metal Harness
Mountings—New York City
A. Burke & Co., Combs and Hair
Ornaments—Leominster, Mass.
Herz & Co., Automobile Goods—
New York City
Ideal Gas & Elec. Fixture Co.—
Wichita, Kas.
J. & W. S. Granberry, Mfg. Jewelers—
Newark, N. J.
Dean Electric Co., Electrical Goods—
Elyria, O.
Arrow Elec. Co., Electrical Goods—
Hartford, Conn.
Varney Jewelry Co., Mfg. Jewelers—
Wichita, Kas.
John Wanamaker, Department Store—
Philadelphia, Pa.
National Electric Lamp Co.—
Cleveland, O.
Silver State Plating Co.—
Denver, Colo.
Capitol Electric Co., Electrical Goods—
Denver, Colo.
Clarke Blade & Razor Co.—
Newark, N. J.

Avoiding the Danger of Clogging

With some sand blast machines, when they are left to stand for any length of time the sand packs down tight and if there is any dampness in the air at all, it absorbs it and the sand becomes very hard and solid, so that when the machine is started up again, it is found that the sand will not feed.

It is then necessary to take the piping all apart in order to clean it out and renew the sand in order to get it in working order again.



THE
RELIEF
VALVE
on the
top of the
Sand Blast
Controls the Sand
Flow

Can't Clog Pipe System

With our machines, however, all of this procedure is unnecessary as we have a little door at the bottom of the machine, and this can be opened and the sand loosened in a few moments.

Thus continuous service is assured the user.

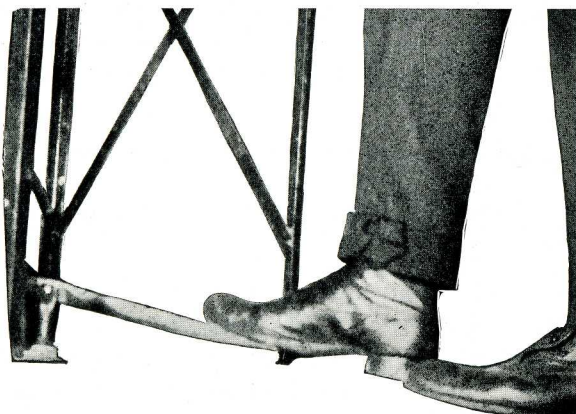
When it is required that the sand be removed, it is only necessary to loosen the little plug at the bottom of the machine, and the sand will run out in a very few minutes, when the plug is replaced and the machine refilled by throwing a new supply of sand through the upper door on the side of the machine.

Standard Iron Pipe Used

The piping system that we employ in the construction of these machines consists only of standard iron pipe and fittings, easily and cheaply procured locally should they require renewal at any time.

Replacement of these parts, however, is very rare and then only after a number of years of steady operation.

No long curved pipes that wear out rapidly by the friction of the driving sand. (Our short straight pipes are not filled with driving, cutting sand, but gently lifted sand—lifted by suction only. At the nozzle it receives the full driving power of the air to apply it directly onto the work. No lost motion or lost power here.)



THE FOOT LEVER that operates the above shown Relief Valve

Long curved pipes so frequently seen on other makes of sand blast machines not only require a great deal of power for driving the sand through them, but they wear out rapidly and are expensive and difficult to replace when worn.

Standard iron pipe and fittings therefore mean cheapness to replace, easily procured anywhere when wanted—but best of all with our system of suction sand feeding to the nozzle, they do not wear out—not for many years.

Air Supply Is Very Important

The sand blasting process depends for its successful operation on a proper supply of air, not only in the matter of volume but also in the matter of pressure.

The pressure that we ordinarily use is about 3 lbs., but this may be varied according to the kind of work that is to be sand blasted.

For instance, very thin metal would buckle and curl if a higher pressure of air were used, whereas with iron or steel for some purposes a high pressure may be employed, but ordinarily most purposes are served best by using the air supply that we furnish with the outfits.

The Dust Is Enclosed

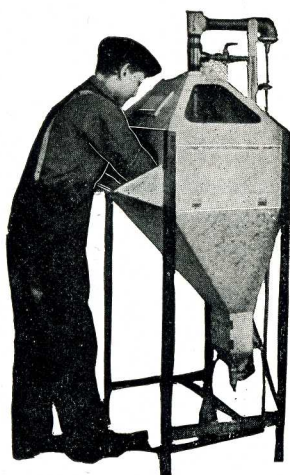
The sand blasting machines that we furnish are of the cabinet type and the hose type.

The cabinet type machine is preferred in factories because the operator can stand in front of the machine with his hands thrust through the arm hole cuffs and observe the work as it is being sand blasted under the nozzle, being held there in the operator's hand.

No Suction Fan Needed To Carry Off Dust

All the dust is confined inside of the cabinet and no exhaust system is required in order to carry the air from the cabinet.

As a rule a pipe is led from the top of the machine out of a window or up a flue and the pressure of air which is being pumped into the cabinet in order to operate the sand blast machine is of sufficient force to propel it out through this pipe without the aid of any additional outside force.



Any Boy or Girl Secures the Best Results at the First Try.

The sand being used in the machine gradually becomes pulverized in use and then the finer particles will float away with the air through this exhaust pipe and out of the window or up the flue.

In cases where the dust and excess air cannot be led out in this way, then it is customary to run a pipe into a barrel half filled with water and covered with burlap.

The air goes into the barrel depositing the sand dust into the water and the excess air filters out through the burlap.

If a suction fan is desired for this work we can supply it—see page 40.

Foot Controls Sand Flow

The cabinet type machine is so constructed that the feed of sand is controlled by the operator's foot. (See page 35.)

A pressure of the foot closes the valve on the machine and the sand feeds.

As long as the foot is kept on this lever the sand will continue to feed.

This foot control, feeding the sand as it does only while the article is underneath the stream of sand at the nozzle, saves a great deal of wear and tear on the interior of the sand blast machine.

Releasing the air pressure off and on as the sand is fed it naturally reduces the amount of power consumed to operate the air pump.

No Dust Bothers the Operator

The operator may stand in front of it and work with comfort, not being bothered by any of the dust which is all contained inside of the cabinet.

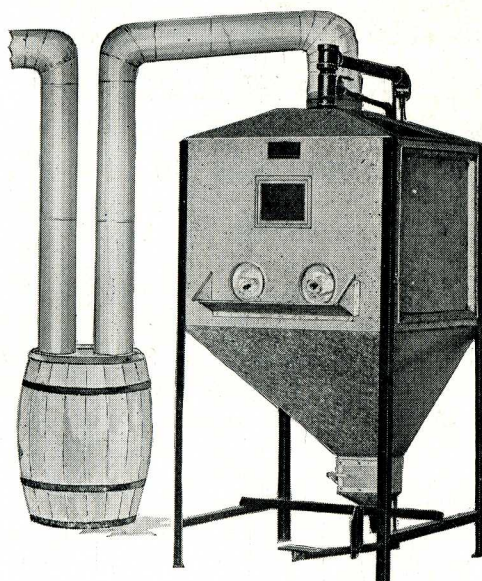
He places his two hands through the arm hole cuffs holding the work under the nozzle and watches the progress of the work through the glass in front of the machine.

Suction and Pressure Carry the Sand

The sand when it strikes the work then falls to the bottom of the machine and is drawn up through the pipe again and in this way used over and over again continuously.

As the air passes through the nozzle it creates a suction in this mixer lifting the sand from the hopper at the bottom of the machine and carrying it up to the nozzle.

Part of the main air supply passes down through the rear outside pipe to the bottom of the machine, loosening it so that the vacuum or suction on the inside pipe finds it very easy to lift the sand and carry it to the nozzle.



The exhaust air from the cabinet may be piped into a barrel or the pipe may be extended to a flue or a window. We also furnish exhaust blowers for this work.—(see page 40).

At the nozzle the main supply of air strikes this sand and projects it onto the work.

In using the machine with our air supply, the operator generally uses a pair of cloth gloves, although the blast will not readily injure the hands.

The Outfit You Will Need

An outfit of this kind consists of one or the other style of sand blast machines, according to the class of work to be sand blasted, the air supply in the form of one of our rotary pressure blowers, and an oil separator.

The oil separator is a small tank provided for the purpose of preventing any lubricating oil from traveling along the pipe from the blower and getting into the sand blast.

In selecting a machine for any given work, it is necessary not only to compare the article with the size of the machine, but also to consider the quantity of work to be done.

A large machine is most always to be preferred even though the work is very small, because the larger the machine, the more rapidly it will do the work.

Most concerns, even though the work is small, use the larger outfits in order to increase production.

One of the smaller machines would no doubt in most cases do all classes of small work, but it being small, the work is necessarily slower than with the large machines.

Estimating The Cost Of Sand Blasting

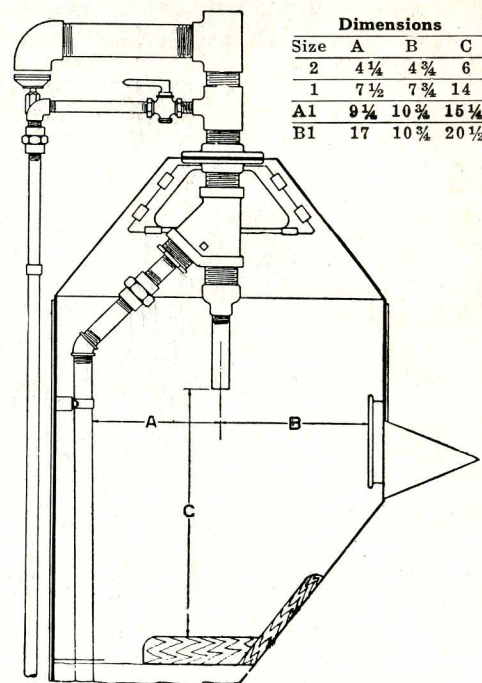
Whenever we receive samples and sand blast them, we can come pretty near estimating just

how quick the work can be done and in this way the cost of production can be very easily figured.

The Air Supply

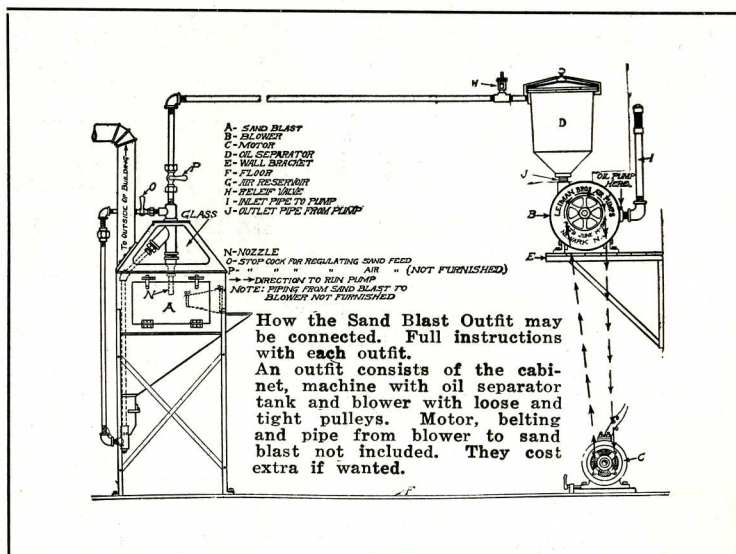
The blowers that we furnish are of the rotary type and the only machines that take up their own wear by the action of centrifugal force.

This means that they will last for many years and give constant, efficient service at all times. See Page 39.



Dimensions			
Size	A	B	C
2	4 1/4	4 3/4	6
1	7 1/2	7 3/4	14
A1	9 1/4	10 3/4	15 1/4
B1	17	10 3/4	20 1/2

TO SELECT THE PROPER SIZE CABINET
Compare the size of your article with the measurement here shown for each size Cabinet and allow sufficient room for moving the article about freely under the nozzle.



SEND SAMPLES For Sand Blasting

Samples may be sent to us with the following information for the proper selection of a sand blasting outfit.

1. Material of which goods are made.
2. Effect wanted.
3. Quantity to be done.
4. Size and weight of the largest piece of work.
5. Volts, cycles and phase of electric current.

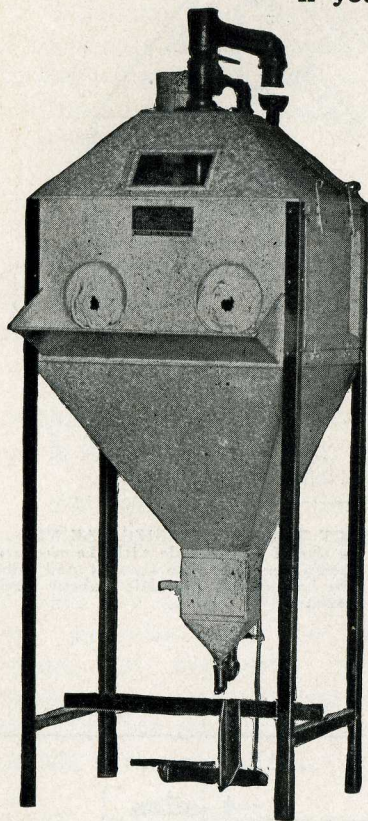
PRICES

OF LEIMAN BROS.
PATENTED

SAND BLASTS

THE LOW PRESSURE CABINET SAND BLAST The Larger the Size — the Faster It Works

If you have your own Air Supply above 5 lbs. pressure (see page 40)



	No. A1	No. B1	No. 1	No. 2
Cabinet, size, inches	24x60	30x36	18x24	10x12
Door, each side, size, inches	10½x20	24x24	9½x14	4½x8½ (This size has only one door)
Horsepower required	5	5	2	1
Air required, cubic feet per minute	160	160	78½	35
Air pressure required	3 lbs. or less according to the work.			
Price of Cabinet Machine as shown	\$120.00	\$105.00	\$75.00	\$50.00
Price of air supply (see p. 39) with oil separator	\$312.00	\$312.00	\$177.00	\$103.00
Price of motor drive air supply (see p. 39) with oil separator	\$766.00	\$766.00	\$434.00	\$299.00
H. P. of motor	5	5	2	1
Price of motor driven outfit complete (see p. 39)	\$986.00	\$972.00	\$609.00	\$434.00

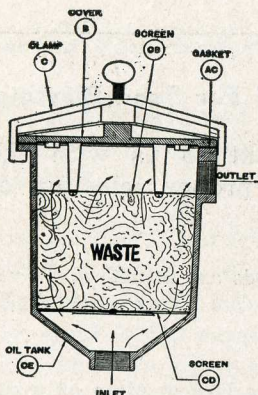
SAND, FLINT and CRUSHED STEEL

FINE, COARSE OR MEDIUM IN 100 LB. BAGS FOR USE WITH OUR SAND BLAST

PRICES	Sand	2c lb.	In 100 lb. bags.
	Flint	6c lb.	
	Crushed Steel.....	10c lb.	

OIL SEPARATOR

The Oil Separator—Placed on the air pump as shown on page 30 prevents any lubricating oil which might otherwise be blown along the piping by the pressure of the air from getting into the sand in the sand blast machine and clogging it up.



For use with
size A1, B1 and
No. 1 sand blast
machine

\$15.00

With 2 inch
iron pipe threads

For use with
size No. 2 sand
blast machine

\$12.00

With 1¼ inch
iron pipe threads

SAND BLAST AIR SUPPLY



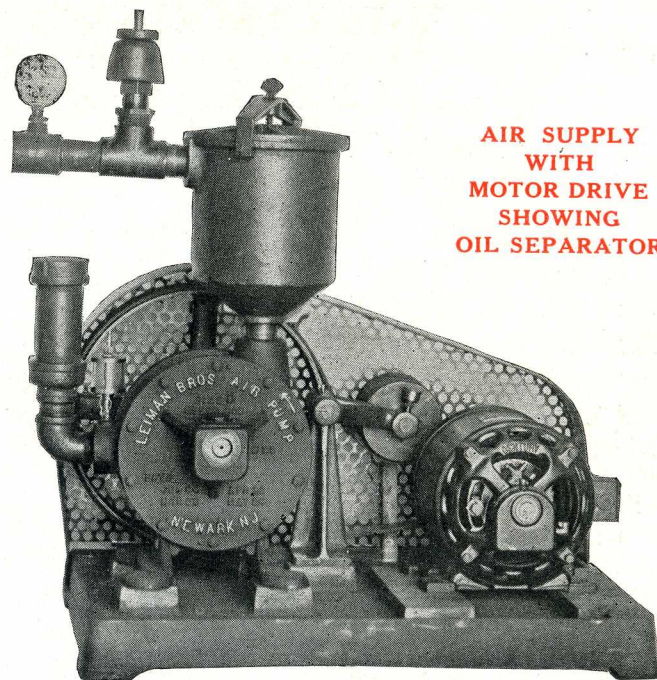
AIR SUPPLY
FOR BELT
DRIVE
SHOWING
OIL
SEPARATOR
ATTACHED

What you get with
this air supply:

The Air Pump.
Pulleys.
Oil Separator.
Pressure Regulator.
Pressure Gauge.
Oil Cup.
Muffler or Inlet
Pipe and Screen.

Prices of Air Supply

	Blower and Oil Separator for Sand Blast Machines	H. P. Required	Blower and Oil Separator Prices with Motor Drive
Price for Size A1 & B1 Blower and Oil Separator	\$313.00	5	\$766.00
Price for Size No. 1 Blower and Oil Separator	\$177.00	2	\$434.00
Price for Size No. 2 Blower and Oil Separator	\$103.00	1	\$299.00



AIR SUPPLY
WITH
MOTOR DRIVE
SHOWING
OIL SEPARATOR

Motors for 110 or 220 Volts D. C. or A. C. 60 cycles,
1, 2 or 3 phase—specify which you want.

What you get with this motor driven air supply

The Air Pump
Drive Pulley
Oil Separator
Pressure Regulator
Pressure Gauge

Iron Base with Belt Tightener
Oil Cup
Drive Belt
Belt Guard
Electric Motor
Muffler or Inlet Pipe & Screen

COMPLETE
MOTOR DRIVEN

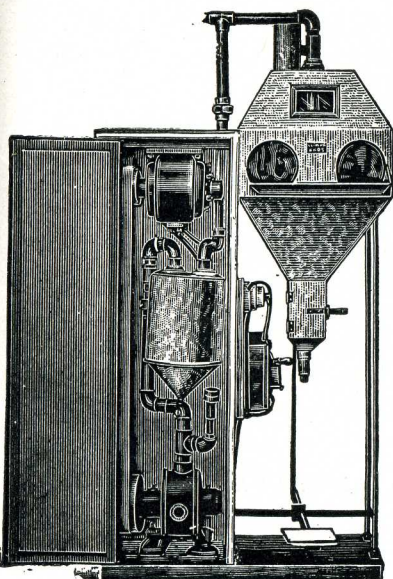
SAND BLASTS

Air Pressure Under 3 lbs.

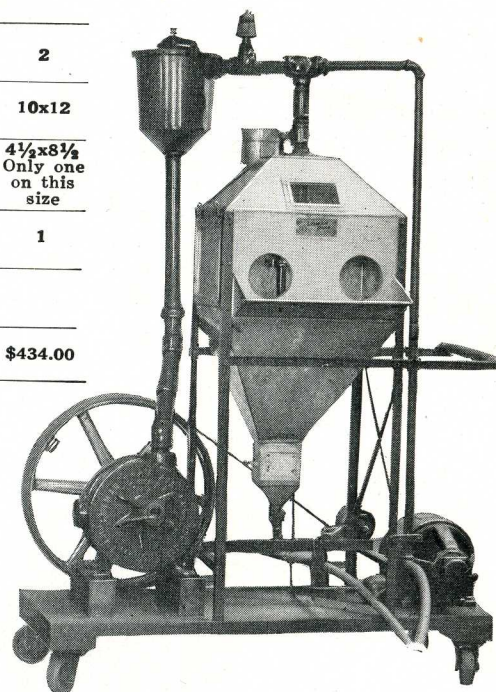
READY
TO OPERATE

	A1	B1	1	2
Cabinet Size, inches	24x60	30x36	18x24	10x12
Door each side, inches	10½x20	24x24	9½x14	4½x8½ Only one on this size
Horsepower of motor	5	5	2	1
Air pressure	Under 3 lbs.			
Price complete as shown	\$986.00	\$972.00	\$609.00	\$434.00

Price includes blower and motor pro-
tective enclosing cabinet.



Size No. 2



Sizes No. A1, B1 and 1

Both outfits are mounted on casters with handle for
pushing about from place to place if desired.

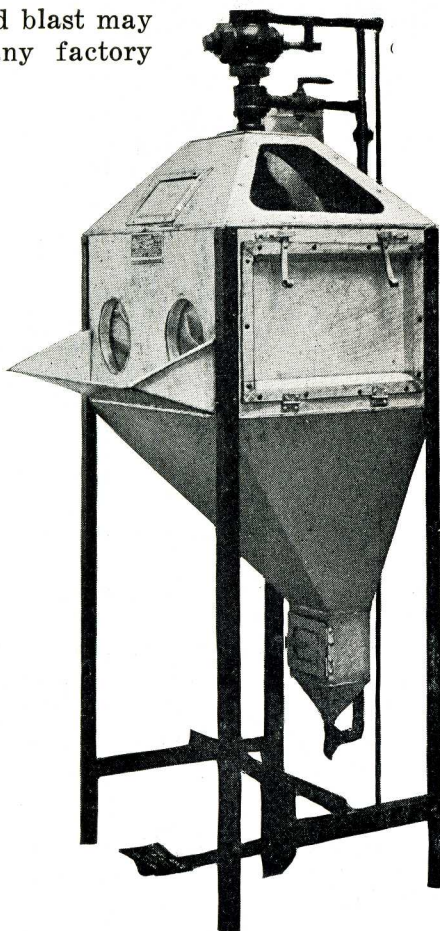
HIGH PRESSURE SAND BLASTS

SHOPS WITH THEIR OWN AIR SUPPLY
Above 5 lbs. Pressure
Use The **HIGH PRESSURE SAND BLAST**

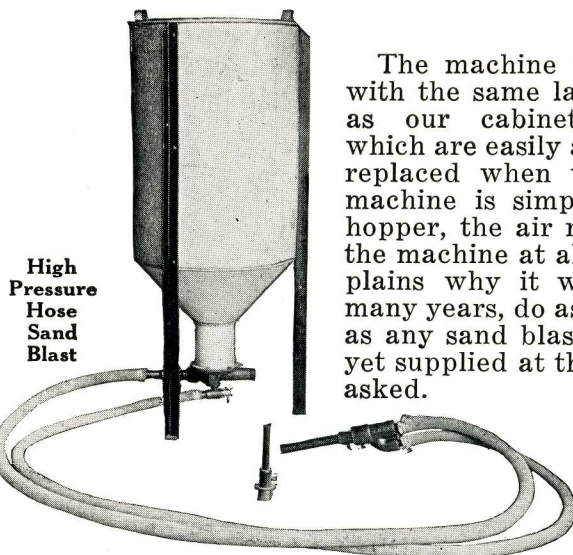
FOR LARGE BULKY WORK
USE THE **HOSE SAND BLAST**

PRICE
\$75.00

This type of sand blast may be operated by any factory supply above 5 lbs. pressure. For instance, if you have 100 lbs. pressure on your line (or any other pressure) you must place a reducing valve on this line to reduce the pressure to that required to do your particular kind of sand blasting work. The lower the pressure that can actually do your work the better. Some work becomes distorted if the pressure is too high. We'll be glad to recommend the proper pressure to do your work.



This sand blast will then come to you ready to work on your air supply at the pressure recommended by us. But first of all—you must have enough air in cubic feet per minute (35 to 160 cubic feet per minute needed according to the size of the machine selected) in addition to the pressure. The **pressure** is one thing—the **volume** of air is still another. If you don't know—find out. Send us a copy of the nameplate on your air compressor.



The machine is equipped with the same large nozzles as our cabinet machines which are easily and cheaply replaced when worn. The machine is simply an open hopper, the air not entering the machine at all. This explains why it will last for many years, do as good work as any sand blast made and yet supplied at the low price asked.

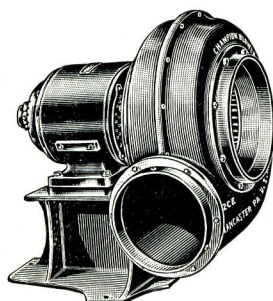
Where a separate room for sand blasting work is not available or it is inconvenient to work outdoors, then the nozzle may be inserted through an opening in a packing box or other large case and the work inside conveniently sand blasted without getting the sand all over the place.

The tank holds enough sand for several hours operation. It is first dried, sifted and then thrown into the top where it passes through a wire screen, thus being resifted. You will require 80 cubic feet of air, the pressure to be in accordance with the nature of the work.

	No. A1	B1	1	2	Hose type
Cabinet, size, ins.	24x60	30x36	18x24	10x12	20" diam.
Door, each side, inches	10 1/2 x 20	24x24	9 1/2 x 14	4 1/2 x 8 1/2 This size has only one door	—
Air required cubic feet per minute	160	160	80	35	80
Air pressure	Above 5 lbs. as required by nature of the work.				
Price of machine as shown	\$135.	\$120.	\$90.	\$65.	\$75.

An air compressor and air pressure reducing valve must be secured of other manufacturers.

**DUST
DISPOSAL
FAN
FOR
SAND BLASTS**



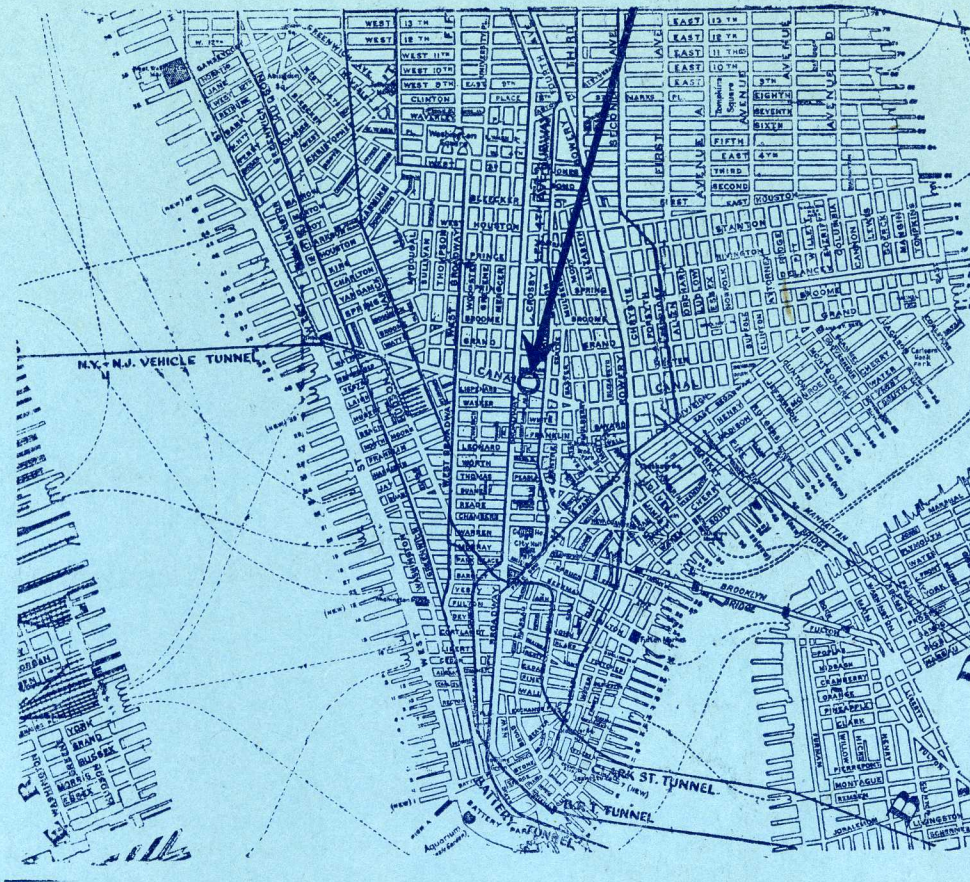
EXHAUST FANS MOTOR DRIVEN

For handling dust from cabinet sand blast machines.

PRICE—For 110 or 220 Volts D. C. or A. C. 60 Cycles—**\$65.00**

A pipe 6 inches in diameter may be run from the exhaust pipe on the top of the sand blast cabinet and connected to a flue or out of a window. In this way all dust from the pulverization of the sand is effectually disposed of.

LOWER MANHATTAN — NEW YORK CITY



SHOWING LOCALITY OF OUR NEW YORK SALESROOMS

23 WALKER STREET

Near Broadway and Canal St.

NEW YORK

TO FIND YOUR WAY AROUND NEW YORK

To find the location of a number on the following Avenues of Manhattan, cancel the last figure of the number, divide the remainder by 2 and add the given key number.

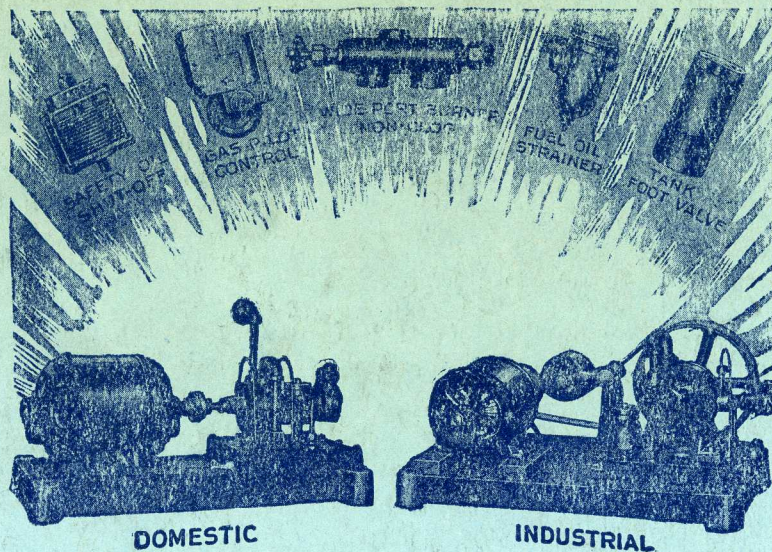
Thus: Where is 596 Seventh Avenue?

Divide 59 by 2 = 30, plus 12 = 42nd Street.

	Add		Add
Avenue A	4	Tenth Avenue	13
Avenue B	3	Eleventh Avenue	15
Avenue C	3	Amsterdam Avenue.....	59
Avenue D	3	Audubon Avenue	165
First Avenue	4	Columbus Avenue	60
Second Avenue	3	Convent Avenue	127
Third Avenue	10	Edgecomb Avenue	134
Fourth Avenue	8	Ft. Washington Avenue	158
Fifth Avenue up to 200.....	13	Lenox Avenue	110
Fifth Avenue up to 400.....	16	Lexington Avenue	22
Fifth Avenue up to 600.....	18	Madison Avenue	27
Fifth Avenue up to 775.....	20	Manhattan Avenue	100
From 775 to 1286 see below:		Park Avenue	34
Up to 1500.....	45	Pleasant Avenue	101
Above 2000	24	St. Nicholas Avenue	110
Sixth Avenue	5	Wadsworth Avenue	173
Seventh Avenue	12	West End Avenue.....	59
Above 1800	20		
Eighth Avenue	9		
Ninth Avenue	13		

Broadway (from First Street up)
Deduct 30

DOMESTIC
and
INDUSTRIAL
OUTFITS



DEPENDABLE
SAFE
CLEAN and
NOISELESS

OIL BURNER OUTFITS LEIMAN BROS.

FUEL OIL HEATING SAVES IN MONEY — TIME — LABOR

It's Desirable Heat—It's Concentrated Heat

Don't use light oils that will ignite without a mixture of air—heavy oils can't burn without air under pressure but that's what makes them safer than coal—and they contain much more heat.

Large and Small Outfits

For

HOMES — APARTMENT HOUSES — HOTELS
COLLEGES — SCHOOLS — CHURCHES
INSTITUTIONS — FACTORIES

Burn any grade of oil, because they are pumping outfits.

Non-clogging, because the wide port is always open.

No soot or carbon, because they operate at 3 lbs. air pressure, not as a fan blower.

No noise, because higher air pressure is what makes noise.

A permanent investment, because they take up their own wear.

Dependable outfits, because you don't have to have just a certain grade of oil—anything you can get goes.

Safe outfits, because they stop when there is no flame, when there is no electricity and shut off the oil themselves.

INQUIRE
ABOUT THEM

LEIMAN BROS.

23 WALKER ST.
NEW YORK

Makers of Good Machinery for 40 Years